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PROCEEDINGS

OF THE

Bristol Naturalists' Society

EDITED BY R. A. AVERY
ASSISTED BY A COMMITTEE

"Rerum cognoscere causas"—Virgil

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NOT LATER THAN FEB. 28.

Other instructions for authors appear on page 112.

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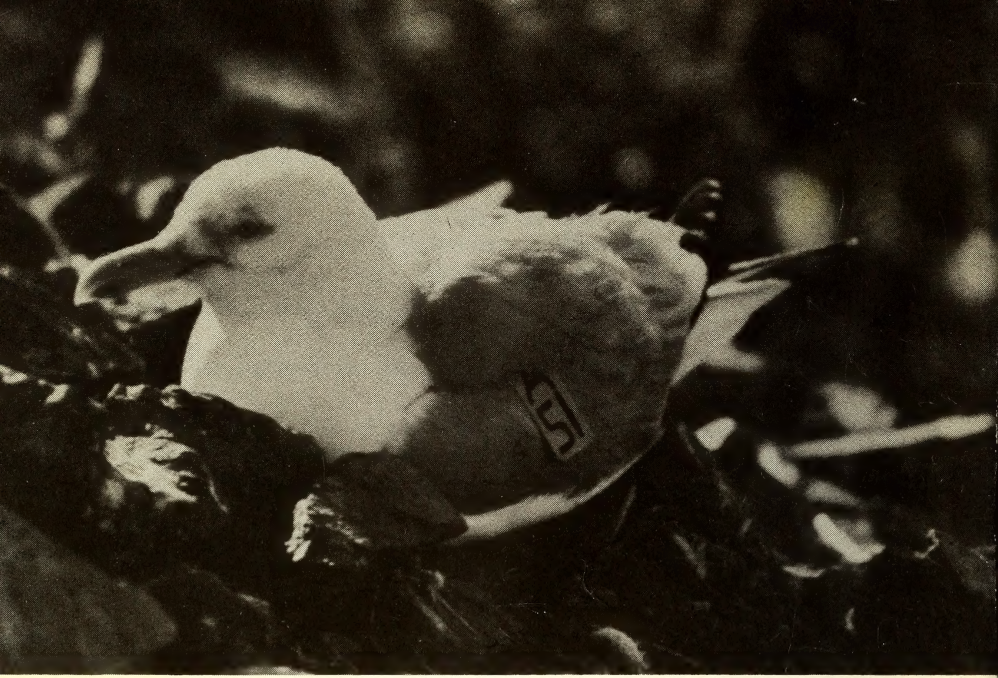

Frontispiece:

Plate 1. A wing-tagged Herring Gull incubating eggs on Steep Holm. Several hundred birds were tagged during 1975 to elucidate their pattern of movements and feeding behaviour. The soiled face of A51 suggests that it might specialise in feeding at rubbish tips, and subsequent sightings of the bird at both the Weston-super-Mare and the Cardiff tips lend support to this theory (see article on pp. 85-97).
Photograph by P.N. Ferns

Plate 2. Great black-backed Gulls with young at the nest on Steep Holm, 23rd May 1956. Photograph by J.H. Savory, from the Society's Archives.

NOTE - The Bristol Naturalists' Society is a signatory to the Fair Copying Declaration, details of which may be obtained from the Royal Society, 6 Carlton House Terrace, London SW1Y 5AG.

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Ex officio the Professors of Botany, Geology and Zoology in the University of Bristol.

REPORT OF COUNCIL, 1975

Membership at the end of the year stood at 777, including 60 Juniors. There are 10 affiliated societies. At the Annual General Meeting the officers and members of Council were elected with Dr. D.H. Peregrine as President for his second year of office.

The Annual Buffet Supper was held in the Royal Hotel with Dr. C.J. Pennycuick of the Zoology Department of the University as guest speaker on "Game Reserves in Africa".

Council are pleased to report that Mr. Richard Chadwick has accepted the leadership of the Junior Section.

With deep regret we record the deaths of:

Mrs. C. Trewman
Miss K.M. Cary
Mr. F.S. Ross
Miss E.C. Nettle
Mrs. G. Sweet
Miss J.M. Dickson
Mr. W.F. Vernon
Mrs. M. Falk

AUDREY HECKELS, *Hon. Secretary*

REPORT OF THE CONSERVATION COMMITTEE, 1975

A survey and nature trail of the River Frome valley from Eastville Park to Frenchay Bridge is being undertaken. A report on Nightingale Valley at St. Annes has been made to the Parks Superintendent.

The "Green Paper" issued by the Arts and Leisure Committee of Bristol City Council was received, since the paper contained many references to natural history matters, particularly in Ashton Court Estate.

The disused railway line from Sturminster Road to Radstock has been studied for sites of natural history interest, but the greater portion of the line will be returned to agriculture or used for road improvements and tipping.

The proposed Barrage across the River Avon at Pill was considered and information on possible effects on wildlife along the river supplied to Bristol Civic Society.

The "Save the Village Pond" campaign has been followed and the attention of the Parish Council of the local Women's Institute drawn to the overgrown state of Hinton Charterhouse pond. Local efforts brought in the Bristol Conservation Corps who have very successfully restored the pond. Clearance of Beckspool at Frenchay has been under discussion with Frenchay Preservation Society, but local development plans may prevent the restoration of this pool.

Recommendations have been made to Woodspring District Council for tree-planting at the Backwell Reservoir and also n the completed tipping site in the Gordano Valley, in order to create natural cover for bird life.

The proposed development of the Rockwell Estate at Kingsweston has been examined, and recommendations put forward to preserve a reasonable number of trees.

K.T. BATTY, *Chairman.*

REPORT OF THE BOTANICAL SECTION, 1975

At the Annual General Meeting in the Botany Department Herbarium on 27th January, 1975 the following were elected:- President: Dr. A.F. Devonshire; Secretary and Treasurer: Miss I.F. Gravestock; Committee: Dr. T.E.T. Bond, Mrs. C.H. Cummins, Mrs. N. Vaughan Davies, Mr. C.H. Hurfurt, Mr. P.J.M. Nethercott, Dr. D.H. Peregrine, Mrs. T.B. Silcocks, and Dr. M.C. Smith.

The following winter meetings were held:-

January 27: Annual General Meeting and Members' Evening.
February 24: (a) Wonders from the Scanning Electron Microscope, by Dr. T.E.T. Bond.
(b) Final Summary of Findings on the Somerset Flora, by Capt. R.G.B. Roe.
March 17: Succulent Epiphytes, by Professor W.H. Dowdeswell.
October 27: Plants from an Alpine Garden, by Mr. F.E. Badrick.
November 24: Members' Evening, with transparencies.

The following field excursions took place, under the leadership of those shown:-

March 1: Goblin Combe, to study lichens. Dr. D.H. Brown.
April 26: An Alpine Garden in Clifton. Mrs. N. Vaughan Davies.
May 31: Orchardleigh Park and Lullington. Miss I.F. Gravestock. The private garden with interesting conifer species was also seen, by invitation of the owner.
June 21: Berkeley and the Little Avon. Miss J. Cox.
June 24: Clifton Down, to study grasses. Dr. M.C. Smith
July 16: Clifton Trees. Dr. A.F. Devonshire.
July 26: Belmont Hill, Ashton Hill Plantation and Gatcombe. Mr. C.H. Cummins.
August 16: Brent Knoll. Mrs. N. Vaughan Davies.
September 13: Newport Docks, with Mr. Trevor Evans. Mrs. T.B. Silcocks. Abundant *Scirpus holoschoenus* seen, also *Trifolium resupinatum*, *Scrophularia scorodonia*, *Verbascum nigrum*, *Carex aregaria*, *C. divisa*, *Cyperus longus*, *C. eragrostis*, *Polypogon monspeliensis* and some alien grasses.
October 4: Fungus Foray to Westonbirt. Joint meeting with the British Mycological Society. Dr. T.E.T. Bond and Mr. Collins. Over 150 species were collected. A fine display of *Boletus chrysenteron*, abundant *Hygrophoropsis aurantiaca*, a complete ring of *Leccinium scabrum* and some *Agaricus langei* were seen. Two apparently new discoveries are under investigation.

I.F. GRAVESTOCK, *Hon. Secretary*

REPORT OF ORNITHOLOGICAL SECTION, 1975

At the 51st Annual General Meeting held in January, J.D.R. Vernon was re-elected President, and R.L. Bland was re-elected Secretary and Treasurer. A Committee, consisting of Mrs. Humphris, Miss Harris, Dr. Brownell, Messrs. P. Chadwick, R. Chadwick, M. Taylor, H.R. Hammacott, P. Farmer, P. Carter, R. Curber and R. Thomas, was elected.

During the year six indoor meetings were arranged, the best attended being that given by Dr. D. Ratcliffe on the Peregrine. There were also talks on Grebes and Waders, the Natural History of Baffin Island, the Birds of Wiltshire, a members' evening and a fieldwork evening.

21 field meetings were held, with excellent attendances, to a wide variety of places. The most successful was the coach trip to Exmoor in June.

In the course of the year the section contributed to a number of national surveys, including the Ornithological Habitat Register, the National Rook Survey, of which the President was a national organiser, and the Nest Record Scheme. Local surveys included a continued survey of Birds in Gardens and in Churchyards, Kestrels in the City of Bristol, and the status of Shelduck, a survey of the tidal Avon, and of starling roosts.

R.L. BLAND, *Hon. Secretary*

REPORT OF MAMMAL SECTION, 1975

At the Annual General Meeting the following officers were elected:- President: Miss E.J. Lenton; Secretary and Treasurer: Mr. R.A. Burberry; Mammal Recorder: Mr. R.G. Symes; Herpetological Recorders: Miss J.B. Webb, Mr. A.F. Jayne, Mr. A. Buchan; Committee Members: Messrs. Jayne, Surch and Walker and Dr. R.J.G. Savage.

Six indoor meetings were held:-
January 17: Annual General Meeting and President's address: "Is it a record?"
February 18: Bats, by Mr. R.E. Stebbings.
March 11: Studying Otters, by Miss E.J. Lenton and Miss J.B. Webb.
October 14: Bovine T.B. and the Badger, by Mr. W. Simpson.
November 11: The Giant Irish Deer, by Dr. R. Coope.
December 9: Frogs, by Dr. H.P. Whiting.

The average attendance was 44.

The following field meetings were held:-
February 2: Fox Spotting, Mr. F.H. Rawlings
February 23: Mammal Survey, Mr. A.F. Jayne
March 23: Sedgemoor Survey, Miss E.J. Lenton
April 5, 12: Roe Deer Watches, Mr. G. Moysey
May 2, 9, 16, 23, 30: Badger Watches, Mr. A.F. Jayne
June 5: Mammal Tracks on Berrow Dunes, Miss J.B. Webb,

July 12: Cricket St. James Wildlife Park, Mr. R.A. Burberry
August 17: Oakford Valley, Mr. T. Hardy
September 14: Blackrock Reserve, Dormouse Survey, Mr. R. Surch and Mr. G. Walker.
October 3-5: Pembrokeshire Weekend, Miss E.J. Lenton
October 26: Wentwood Reserve, Mr. G. Hill.
November 16: Harvest Mouse Survey, Mr. R.A. Burberry
December 14: Goldney Hall, Mr. R.G. Symes

The Mammal Society's National Surveys on dormice, harvest mice and otters have been supported individually by members and by field meetings. Contributions have also been made to the national distribution mapping scheme and to the Section's local scheme.

R.A. BURBERRY, *Hon. Secretary*

REPORT OF GEOLOGICAL SECTION, 1975

The Annual Business Meeting of the Section was held on 9th January 1975. The following were elected:- President: Mr. T. Harrison; Vice-President: Mr. A.E. Frey; Secretary: Dr. A.N. Insole; Field Secretary: Mr. D. Hamilton; Committee: Professor D.L. Dineley and the President of the Student Geological Society (both ex officio), Mrs. Hamilton, Mr. Hollingsworth, Miss Pounder, Mr. Thompson, Dr. A.S. Hawkins, Miss Mayle.

The programme included:-
February 20: Visit to Australia, Dr. R. Bradshaw
March 20: Structure and Scenery of the Southern Pyrenees, Dr. P.L. Hancock
October 23: Science in the Garden of Eden - A study of coral reefs, Dr. J.A.E. Hubbard
November 20: Canadian Artic Lowlands, Professor D.L. Dineley

The following field meetings took place:-
May 18: Eastern Mendip Quarries, Mr. I.H. Ford
July 20: Chipping Sodbury Quarry, Mr. D. Hamilton
September 28: Middle Hope, Dr. A.B. Hawkins

C.J. Mayle, *Hon. Secretary*

REPORT OF ENTOMOLOGICAL SECTION, 1975

The following were elected at the Annual General Meeting on 7th January:- President: Mr. B. Harper; Secretary: Mr. G. Best. All members of the section will be eligible to serve on the Committee. Recorders: Moths-Mr. K.H. Poole; Butterflies and other orders-Mr. A.N. Cross.

Field meetings in 1975:-
June 1: Goblin Combe
June 15: Forest of Dean
July 20: Brockley Combe
September 27: Entomology Exhibition, London.

Indoor meetings:-

January 7:	Annual General Meeting
April 15:	Butterfly Conservation
November 11:	Members' Evening

G. BEST, *Hon. Secretary*

REPORT OF JUNIOR SECTION, 1975

Mr. J. Bainbridge was President of the section and Mr. R. Chadwick, Secretary. In August, Mr. Bainbridge moved north to take up a new appointment and Miss E.J. Lenton acted as President to the end of the year.

Six indoor meetings were held. These included talks on Baffin Island, Rocks and Fossils, Animals at Large (by Miss Elaine Hurrell) and Animals in Care (by an R.S.P.C.A. officer). A Workshop Evening was held, and, combined with the Members' Evening, a visit was made to the University's animal rooms in the Zoology Department.

One or two field meetings were held each month. Conservation work was carried out in Black Rock Reserve. Badgers were watched at their setts in May and in the same month good views were had of a lesser-spotted woodpecker near Hallen. A picnic supper was enjoyed in a Clifton garden after a walk in Ashton Park, and chalk-loving plants were seen in profusion near Imber. A mink lair was found on Nailsea Moor and dormouse evidence was seen in a Mendip wood. One of the highlights of the year was a weekend trip to Minsmere, Suffolk, where 125 bird species were seen.

Membership reached 61 by the end of the year. Attendance was rather thin at some meetings but much enthusiasm and enjoyment has been shown by a nucleus of members.

JOHN BAINBRIDGE and ELIZABETH LENTON

ACCOUNT OF GENERAL MEETINGS, 1975

Our first meeting of the year on 21st January was an address by our President, Dr. D.H. Peregrine, on "The Severn Bore".

February 6: Professor H.E. Hinton spoke on "Mimicry". If an animal is seen, felt, smelt, or heard by another that can eat it or exploit it in some way, a basis already exists for the evolution of deception, and nearly all animals resort to deception for protection.

March 6: Mr. Michael Kendall of the Natural History Unit of the BBC spoke on "Compiling a Natural History Film". Mr. Kendall acts as the eyes and ears of the BBC in seeking out and auditioning new material.

October 9: Mr. M.J. Penistan spoke on "Life in a Woodland Succession". A former conservator of forests in E.England, Mr. Penistan described what happens in this increasingly extensive and important habitat.

November 6: Dr. Paul G. Mann, M.D., Director of the Public Health Laboratory at the Royal United Hospitals, Bath spoke on "Animal Ailments and Human Health". His talk was illustrated by colour slides.

December 4: "Members' Evening". This was a different type of evening with members bringing along slides suitable for a quiz. There was also a slide competition "Beauty in Nature".

AUDREY HECKELS, *Hon. Secretary*

GENERAL FIELD MEETINGS, 1975

Ten day or half day meetings and four evening meetings were held, and were generally well attended. The evening meeting to see the Severn Bore was particularly popular. Three mid-week rambles were also held. A list of the meetings with leaders and things seen is given below. A fuller account is kept in the records of the Field Committee.

January 25: Miss R.C. Lee. Nailsea Moor & Kenn Moor. Birds, including flocks of lapwing, dunlin and golden plover.

March 30: H.G. Hockey. Arlington Court, a National Trust property in Devon. Trees and birds, including herons and buzzards; Shetland ponies and Jacob sheep; also a fine house and collection of carriages.

April 19: A.F. Devonshire. Forest of Dean. A walk along the east shore of Cannop ponds, and a visit to the Arboretum near Speech House.

May 11: H.G. Hockey. Dunkery Beacon. A walk from Dunkery Gate over Dunkery Beacon to Cloutsham and Webber's Post. Moorland and a wooded valley. Ring ousel, whinchat and buzzard were seen.

May 21: D.A.C. Cullen. An evening visit to Nag's Head Plantation, Forest of Dean, for birds, including woodcock.

June 3: H.G. Hockey. Tintern Forest. A walk through a steep limestone woodland. Birds and plants, including a fine group of aconites.

June 7: Miss E.J. Vinnicombe. Cotswold Farm Park, at the Farm Park near Guiting Power; rare breeds of cattle, sheep, pigs and poultry were seen. The party then visited the country park at Broadway Tower and Westonbirt Arboretum.

June 18: Miss E.J. Vinnicombe. Clevedon Cliff Walk. An afternoon walk round the Nature Trail at Clevedon.

June 28: Miss R.C. Lee. Wylye Valley. Plants of the chalk down, including seven species of orchid, and of open woodland.

July 9: Miss C. Groves. A walk over the Downs and Portway, which was seen under unusual conditions of no traffic. Mainly for plants.

July 19: Miss C. Groves. The World-wide Butterfly Farm near Over Compton and a tour of Mrs. Hughes' farm, Sturminster Newton, for birds, plants and insects.

July 22:	I. Fleming. An evening walk round the Nature Trail at Clevedon. Afterwards the party were entertained by Mr. and Mrs. Fleming.
August 2:	R.C. Carber. Pennington marshes near Lymington for shore birds.
August 7:	D.H. Peregrine. An evening meeting to see the Severn bore at Arlington Passage and Framilode.
August 13:	A.F. Devonshire. An afternoon visit to the University Botanic Garden and Leigh Woods.
September 7:	H.G. Hockey. A visit to Commander Collett's garden at Yew Tree, Lydart, near Monmouth.
October 8:	Miss R.C. Lee. Painswick Beacon and Cooper's Hill for trees, plants and birds.

A.F. DEVONSHIRE, *Hon. Field Secretary*

REPORT OF THE LIBRARIAN, 1975

Use of the Society's library has increased noticeably. It was visited on 277 different occasions, and over 400 items were borrowed by more than 80 members.

Members of the Library Committee met for several working evenings mainly to make much-needed space by the sale of out-dated or irrelevant books.

Money received from sales has been used to replace missing journal parts and to purchase new books, including eighteen volumes of the *Procs. Som. Arch. Nat. Hist. Soc.* More books are also on order. We now expect to send journals to be bound more routinely. Exchanges have been cancelled with ten institutions, three of which have become subscribers to the *Procs. Bristol Nat. Soc.*

We are grateful as ever to those who have made donations of books and journals, and to the Director of the City Museum, Bristol, and the Librarian of the University of Bristol, for providing us with accommodation.

JENNIFER SCHERR, *Hon. Librarian*

ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 1975

1974 £		£	£
	Members' Subscriptions		
1,136	Full Members	1,126.78	
-104	Full Members of the same household	99.75	
34	Corresponding Members	26.25	
11	Associates	23.00	
28	Juniors	29.50	
21	Affiliated Societies	25.25	
1,334			1,330.53
	Donations		1.00
190	Proceedings		
	Grants	35.00	
	Offprints	16.50	
	Sales	52.83	
			104.33
	Sale of journals and books		1,067.20
	Field Committee: profit		17.41
3	Sale of badges		0.60
10	Profit on Buffet Supper		9.20
67	Interest on deposit account		66.82
2	Interest from National Savings Bank		1.60
28	Interest on Bonds and premium on redemption		27.75
3	Members contributions to the Harry Savory Illustrations Fund		9.15
991	Balance from last account		1,326.76
£2,628			£3,962.35

Hon. Treasurer
13 January, 1976

1974		£	£
266	General Printing and Stationery	322.77	
253	Postages and telephone	367.72	
			690.49
491	Proceedings (1974, part cost only)		30.07
53	Books	41.25	
62	Subscriptions for journals etc.	76.00	
48	Replacement of lost journals and incomplete runs	14.33	
	Binding	421.01	
5	Fire insurance (library)	7.50	
			560.09
11	Contributions to Council for Nature, S.W.N.U. etc.		16.25
	Fares and expenses of general meetings		1.50
17	Field Committee: loss		
95	Grants to Sections:		
	Botanical	10.00	
	Mammal	30.00	
	Ornithological	40.00	
			80.00
	Balances to next account:		
104	Cash in bank, current account	275.98	
714	Cash in bank, deposit account	1,780.47	
41	Deposit in National Savings Bank	42.30	
400	* £400 7% and 9½% British Savings Bonds	400.00	
68	In hands of Field Committee	85.20	
			2,583.95
£2,628			£3,962.35

*Including the Harry Savory Illustrations Fund £81.83

Note: These accounts do not record balances held by sectional treasurers and the Ornithological Section Special Fund of £116-94

I have examined the books and records of the Society and found them in agreement with the foregoing account.

T.B. Silcocks

20 January 1976

F. STENHOUSE ROSS

Frank Stenhouse Ross (1890-1975) will long be remembered by Bristol Naturalists, not only for his ineffable charm, his picturesque appearance, and the rich timbre of his voice, but also for the yeoman services he rendered the Society from 1935 to 1963 when he became an Honorary Member. He had been a Member of Council, Assistant Secretary, President of the Geological Section, and co-author of several papers.

By descent he was a Scot and proud of it. His grandfather was an officer in the Indian Army during the Mutiny, his father was a commissioner in the South Seas and a barrister, and Ross himself was born in Fiji. His schooling on formal lines at Berkhampstead did little to nurture his avid love of Nature or his urge to collect fossils. In his later teens he made off to an uncle in America, but their plans were shattered, when his uncle became seriously ill. That was before he landed. He wandered, perforce, from place to place, fetching up finally on a ranch in Alberta.

The esoteric always caught his attention and so, very soon after his return from Canada, he was running a Nature Food shop in Cotham Hill, Bristol, and practising as a Masseur. During the Second World War, he was employed by the B.A.C. at Filton. On foot and by bicycle (he often cycled to London and back!), he explored the geology of the Bristol area with men of the calibre of Tutcher and Truman, gratifying his itch to gather fossils. Many institutions at home and abroad have been enriched by his benefactions. Ammonites were his main study and to the very end of his life, his eyes would gleam at the sight of one, just as they would at the sight of a spirited horse, especially if it carried a Mexican saddle. Indeed, he had the air of a caballero, and some of us would on occasions find ourselves playing Sancho Panza to his Don Quixote.

His love of his fellow men and his concern for the underprivileged whatever their colour or creed, generated a philosophical and ethical code which made him an ardent worker in the Labour Party. Argument and debate, whatever the topic, would always engage his attention, but a hint of prejudice or bad temper would drive him to evasive action. With his sunny nature, he could detect neither guile or malice in his fellows, and revenge, if he suffered therefrom, was alien to his thinking.

If Bristol Naturalists would seek his material memorial they have only to look around in their own records. But there is a higher level on which they can join his devoted wife, his three sons and his daughter in remembering a finely set up, warm hearted natural gentleman.

C.E. LEESE

BRISTOL BOTANY IN 1975

BY A.J. WILLIS
(Department of Botany, University of Sheffield)

The weather during 1975 was very good, and the summer was especially dry, warm and sunny. Temperatures during June, July and August were distinctly above normal and every month during the period May to November was sunnier than average. Rainfall for the year, recorded at Long Ashton Research Station, was 731.4 mm, being only 80.3% of the average. Nevertheless the rainfall was not as low as in the exceptionally dry year of 1973. June and October were extremely dry months, whereas January and especially September were particularly wet months.

The very mild weather in January (the temperature was on average 2.8°C above normal) led to some flowering of daffodils in Bristol by the end of that month, and also at that time two plants of *Hieracium speluncarum* Arv.-Touv. were flowering in Richmond Hill, Bristol (*P.J.M.N.*, usually this rare Hawkweed has a limited flowering period in June). By the middle of February, which was also a mild month, several wallflowers were in flower in the Avon Gorge, and *Arabis scabra* All. was in bud under Leigh Woods. Later in the season there was some second flowering, as during September *Geranium sanguineum* L. flowered well on St. Vincent's Rocks, and in early October *Hieracium speluncarum* flowered again in Richmond Hill *(P.J.M.N.)*.

The low water level at Blagdon Lake made obvious the substantial flourishing colony of *Littorella uniflora* (L.) Aschers. and also made possible the collection (by *J.A.*) of *Fontinalis antipyretica* var. *cymbifolia*. This rare moss has not been previously recorded in v.c. 6. Despite the drying up of Beck's Pool, Frenchay, during the summer, *Acorus calamus* L. is persisting (with *Lycopus europaeus* L.) in this site, although it did not flower *(I.F.G., A.L.G.)*. The pool is now threatened by residential development.

Among the substantial number of records made of the continued existence of plants in sites from which they have been earlier reported are *Schoenus nigricans* L. and *Carex lepidocarpa* Tausch at Max meadows *(R.G.B.R.)*. There was good flowering of the Yellow Star-of-Bethlehem, *Gagea lutea* (L.) Ker-Gawl., at Littleton Wood, near Dyrham *(A.L.G.)*. The Alkanet, *Pentaglottis sempervirens* (L.) Tausch, also persists at Moorend *(A.L.G.)*. A notable rediscovery is of *Eriophorum latifolium* in the Max valley, from which it was last recorded in 1919.

The most notable record for 1975 is of *Ophrys sphegodes* near Dursley, there being no previous reports of the Early Spider Orchid for Somerset or Gloucestershire. This record leads to a considerable, although possibly not too unexpected, extension of the range of *O. sphegodes*, which is best known in Britain in or near coastal sites in the south-east and south, although it has been also recorded as far inland as Oxford.

The fear expressed in *Bristol Botany in 1974* that *Carex depauperata* may be extinct in Somerset has fortunately proved to be unfounded, as this rarity, although still in danger of damage, is known to be surviving in its Axbridge station.

A weekend field meeting of the Botanical Society of the British Isles was held in Bristol during June, organized by Dr. M.C. Smith. Under the guidance of Mr. P.J.M. Nethercott members were able to see the rich assemblage of *Sorbi* in the Avon Gorge, a useful 'specimen leaf card' showing the outlines and venation of the leaves of eleven taxa of *Sorbi* being prepared for this occasion. A visit was also made to the Berrow dunes, where in recent years the thickets of *Hippophaë rhamnoides* L. have increased substantially. There is evidence of spread of *Juncus subulatus* Forsk. in its station in the marshy area seaward of the dunes.

Dutch Elm disease continues to take its toll, the destruction of elms in the Vale of Berkeley being very extensive. Many of the elms on Durdham Down have also been lost *(P.J.M.N.)*.

Names of contributors associated with several records are abbreviated thus:

J.A., Mrs. J. Appleyard
C.H.C., C.H. Cummins
I.F.G., Miss I.F. Gravestock
A.L.G., A.L. Grenfell
P.J.M.N., P.J.M. Nethercott
R.G.B.R., Capt. R.G.B. Roe, R.N.

G: Gloucestershire S: Somerset

Thelypteris limbosperma (All.) H.P. Fuchs The Mountain Fern is still persistent near Cranmore Tower ('Downhead Common', see *Bristol Botany in 1958*, p.423), S, *R.G.B.R.* This site has been much affected by drainage and clearing operations, but fortunately most of the plants for which the site is known are surviving in boggy pockets.

Rorippa sylvestris (L.) Bess. Strongly established as a weed in nursery, Stanton Drew, S, *C.H.C.*

Hypericum androsaemum L. Barleycombe, near Christon, S, *J.A.*

Silene noctiflora L. The Night-flowering Campion was growing together with *Euphorbia exigua* L., *Kickxia spuria* (L.) Dumort. and *K. elatine* (L.) Dumort. in a cornfield near Codrington, G, *A.L.G.*

Sagina nodosa (L.) Fenzl The Knotted Pearl-wort is still present on slag-heaps at Priddy, S, *I.F.G.*

Minuartia hybrida (Vill.) Schischk. Old railway line near Sandford Station, S, *J.A.*

Medicago arabica (L.) Huds. On Tuttor's Hill, Cheddar, S, and still abundant on Cadbury Hill Camp, Congresbury, S, *I.F.G.*

Lotus tenuis Waldst. & Kit. ex Willd. A single plant on sandy ground, shore of Blagdon Lake, S, *J.A.*, conf. *R.G.B.R.* This Trefoil is rare in North Somerset.

Lathyrus aphaca L. A single plant on roadside verge with *Vinca major* L., near Westerleigh, G, *A.L.G.*

Filipendula vulgaris Moench A plant with double flowers, Crook Peak, S, *A.L.G.*

Sorbus x *thuringiaca* (Ilse) Fritsch *(S.aria* x *aucuparia)* Leigh Woods, S, *P.J.M.N.* In 1958 stump shoots were observed from a felled tree; after a slow recovery of this specimen, leaf shape and texture are now normal.

Hedera helix L. A striking variant occurs in some quantity near the track leading down from Longbottom Farm to Rowberrow, S, *J.P.M. Brenan.* This ivy, apparently normal in habit and climbing up to about 3 m, has leaves much narrower than usual, most 1 - 2.5 cm wide, entire, lanceolate to rhombic-lanceolate and attenuate at apex. Where it occurred this form was plentiful and uniform, but more normal ivy was not far away (specimen in Herb Kew).

Myrrhis odorata (L.) Scop. Two plants of Sweet Cicely on motorway bridge, Moorend, G, *A.L.G.* This is a most unusual plant in the Bristol area, and may have been introduced from the north by passing traffic.

Petroselinum segetum (L.) Koch At least fifteen plants of the Corn Caraway extending for some 50 m on the side of the Hawkesbury Upton - Hawkesbury road, G, *A.L.G.* This is a new area for this now infrequent Umbellifer.

Sison amomum L. Near Sodbury Common, G, *A.L.G.*

Euphorbia lathyrus L. Tip, Moorend, G, *A.L.G.*

E. platyphyllos L. One plant in 1974 in quarry entrance, Tytherington, G, *A.L.G.*, and one in garden, Winterbourne Down, G, *A.L.G.*

Lysimachia vulgaris L. Ditch by drove near Madam Bridge, near Wick St. Lawrence, S, *J.A.*

Blackstonia perfoliata (L.) Huds. The Yellow-wort was growing with Viper's Bugloss, *Echium vulgare* L., on roadside bank, Axbridge, S, *A.L.G.*

Cynoglossum officinale L. Under a bridge of the disused railway line, Wellow, S, *Mrs. P.H. Royle* (per *I.F.G.*).

Veronica scutellata L. Boggy ground, Downhead Common, near Shepton Mallet, S, *J.A.*

Verbena officinalis L. The Vervain is abundant in a lane near Croscombe, S, *I.F.G.*

Galium uliginosum L. Boggy field by railway arch, Bourne, near Rickford, S, *J.A.*

Dipsacus pilosus L. Near Halfpenny Bridge, Snuff Mills Park, Bristol, and near Frome Bridge, Blackberry Hill, Bristol, G, *I.F.G.* Also by the River Frome, Moorend, G, *A.L.G.*

Bidens tripartita L. One plant on bank of the River Frome, Moorend, G, *A.L.G.*

Senecio viscosus L. Cheddar Station, S, *J.A.*

Lactuca serriola L. Abundant on rubbish tip, Kingsweston, G, *I.F.G.* Also present here is a lilac form, with dark purple streaks, of *Linaria purpurea* (L.) Mill.

Potamogeton perfoliatus L. Blagdon Lake, S, *J.A.* This Pondweed, local in North Somerset, has not been recorded for the district in recent years.

P. berchtoldii Fieb. Rhine near Lympsham, S, *J.A.*, conf. *R.G.B.R.*

Polygonatum multiflorum (L.) All. Roadside, Buckland Dinham, near Frome, S, *I.F.G.*

Juncus compressus Jacq. Field near Blagdon Lake, S, *J.A.*, conf. *R.G.B.R.* The Round-fruited Rush was recorded from this area previously by H.S. Thompson (*Somerset Rep.* 1931).

Allium schoenoprasum L. Tip at Moorend, G, *A.L.G.*

Coeloglossum viride (L.) Hartm. In field, Wellow, S, *Mrs. P.H. Royle* (per *I.F.G.*). Although not usually seen in large numbers, the Frog Orchid is quite widely scattered in the Bristol district.

Ophrys sphegodes Mill. A very few plants of the Early Spider Orchid were found in May near Dursley, G, *Mrs. N.J. Gibbs*, conf. *P.F. Hunt* and *P. Taylor* and colleagues at Kew. This is a first record for v.c. 34; the finding of this rare plant in Gloucestershire leads to a very notable extension of its known range. The nearest recorded localities for *O. sphegodes* are in Wiltshire, Oxford and Dorset. The Late Spider Orchid, *O. fuciflora* (Crantz)Moench, has been reported in the past from Painswick Beacon, G (see the *Flora of Gloucestershire* by Riddelsdell, Hedley and Price) but is not certainly known from there.

Eriophorum latifolium Hoppe The Max valley, near Winscombe, S, *R.S. Cropper* (per *Mrs. S.C. Holland*). The Broad-leaved Cotton-grass was last reported in this site in 1919 *(Bristol Botany in 1919)* and is very rare in Somerset. It is growing in a small area associated with *Anagallis tenella* (L.)L., *Dactylorhiza praetermissa* (Druce) Soó, *Epipactis palustris* (L.) Crantz and *Gymnadenia conopsea* (L.) R.Br.

Eleocharis uniglumis (Link) Schult. On saltings, together with *Carex distans* L., by the River Axe north-west of Lympsham, S, *J.A.,* conf. *R.G.B.R.* This record extends the range of this Spike-rush considerably to the west in North Somerset (for previous records for North Somerset see *Bristol Botany in 1972*).

Carex depauperata Curt. ex With. It was reported last year *(Bristol Botany in 1974)* that the site of this sedge near Axbridge, S, had been destroyed. Fortunately this was true of only part of the site, and especially welcome are reports *(J.A., A.L.G.)* that this rare species still exists in its Axbridge locality, and flowered in 1975, although there was damage by passing vehicles.

C. rostrata Stokes Abundant around Bishop's Pond, Tor Hole Wood, near Chewton Mendip, S, *J.A.*

C. divulsa Stokes Hedgerow, Stoke Bishop, Bristol, G, *I.F.G.*

C. remota L. Marsh, Frome Valley, near Frenchay, G, *I.F.G.*

Vulpia myuros (L.) C.C. Gmel. Still present under Leigh Woods, on the towpath, S, *P.J.M.N.*

Poa bulbosa L. var. *vivipara* Koch This grass was thinly scattered over a patch about 4 m square on a steep south-facing unstable slope of a disused quarry at Hampton Rocks, near Bath, S, *R.G.B.R.,* det. *Dr. C.E. Hubbard.* The Bulbous Poa has been reported previously from the Bristol area only from Avonmouth. It is a very local plant of coastal sites, and is rarely found inland.

Catabrosa aquatica (L.) Beauv. Near Ham, Berkeley, G, *P.J.M.N.*

Koeleria vallesiana (Honck.) Bertol. It was stated in *Bristol Botany in 1974* that until the records made by R.S. Callow there had been no recent reports of this rare grass from Worle Hill, S. However, records made by *R.M. Burton*, who conducted a survey of the Weston-super-Mare area in the early 1960's, include *K.vallesiana* for Worle Hill in 1962, but no records for Sand Point (per *R.G.B.R.*).

ALIENS. *Lobularia maritima* (L.) Desv. Waste ground above Wickham Glen, Stapleton, Bristol, G, *I.F.G.*

Aubrieta deltoidea (L.) DC. Small colony established on cliff at Cheddar, south-east side, S, *P.J.M.N.*

Hedera helix L. var. *hibernica* Jaeg. In garden of demolished house, Totterdown, Bristol, S, *I.F.G.*, conf. *Miss A. Rutherford*.

Petroselinum crispum (Mill.) Nyman Wall, Redcliffe Parade, Bristol, S, *I.F.G.*

Heracleum mantegazzianum Somm. & Levier A few plants of this Giant Hogweed near pond by roadside, Little Sodbury, G, *I.F.G.*

Populus x *jackii* Sargent In wild area of Snuff Mills Park, Bristol, G, *I.F.G.*, det. at Kew.

Datura stramonium L. One Thorn-apple plant on tip at Moorend, G, *A.L.G.*

Verbascum phlomoides L. One plant in lay-by near Old Sodbury, G, and one at Hawkesbury Upton, G, *A.L.G.*

V. blattaria L. Three plants on old railway line near Sandford Station, S, *J.A.*

Mentha x *villosa* Huds. nothomorph *alopecuroides* (Hull) Briq. pro var. Near entrance to estate, Wraxall, S, *C.H.C.*, det. *Dr. R.M. Harley*. This mint of cultivated origin is one of the many hybrid forms between *M.spicata* and *M.suaveolens* (= *rotundifolia* auct.), and is often mistaken for *M.suaveolens*.

Symphoricarpos rivularis Suksd. Well naturalized along the River at Moorend, G, *A.L.G.*

Galinsoga ciliata (Raf.) Blake Roadside near Stanton Drew, S, *J.A.* This Composite has been previously recorded from Chew Magna *(Bristol Botany in 1968)*.

Petasites japonicus (Sieb. & Zucc.) F. Schmidt It was reported in *Bristol Botany in 1974* that this Giant Butterbur at Lasborough, G, was covering about ¼ acre. Information from *Miss M.L. Scott* (per *Mrs. S.C. Holland*) now indicates that her parents planted this between 1902 and 1913 and that when they returned to live at Lasborough (having left during the 1914-1918 war) it was still present, though very overgrown, in 1953. Clearly the plant has been long established.

Inula helenium L. One plant by the roadside near West Hewish, S, *J.A.* Persisting, although damaged by cattle, at two sites in Compton Dando, S; also persisting in pasture between East Dundry and Norton Malreward, S, *A.L.G.*

Anaphalis margaritacea (L.) Benth. Small colony established in quarry in Leigh Woods, S, *P.J.M.N.*

Kniphofia cf. *uvaria* (L.) Hooker Established since at least 1961 on St. Vincent's Rocks, Clifton, G, *P.J.M.N.*

Allium carinatum L. Near top of Jacob's Ladder, Cheddar, S, *A.L.G.* Previously known near Bristol only from the Avon Gorge.

Nectaroscordum siculum Lindl. (*Allium siculum* Ucria) Well naturalized along a roadside verge by Dyrham Park, G, *A.L.G.* This beautiful plant was first noticed on St. Vincent's Rocks, Clifton, in 1906, where it has flowered from time to time.

Panicum miliaceum L. Under wall in Stanton Drew village, S, *J.A.*

BRYOPHYTES: HEPATICS. *Riccia cavernosa* Hoffm. Margin of Blagdon Lake, S, *J.A.* Previously recorded from the Litton reservoir.

Nowellia curvifolia (Dicks.) Mitt. Wood at top of Cheddar Gorge, S, *P.J.M.N.*

MOSSES. Bryum capillare Hedw. var. *rufifolium* (Dix.) Podp. Old tumbledown wall in Chewton Rabbit Warren (northern part of the Stock Hill Plantation), S, *J.A.* This variety was recorded for West Horrington in *Bristol Botany in 1974.*

Mnium seligeri (Lindb.) Limpr. Clandown Bottom, north-west of Radstock, S, *J.A.*

Fontinalis antipyretica Hedw. var. *cymbifolia* Nicholson Margin of Blagdon Lake, S, *J.A.* This is a new record for v.c. 6, and a welcome addition of a rare variety to the Bryophyte flora of North Somerset.

I thank everyone who has supplied records and helped with these, especially Mrs. J. Appleyard, Miss I.F. Gravestock, Mrs. S.C. Holland and Mr. P.J.M. Nethercott. I am indebted to Long Ashton Research Station for the supply of meteorological records.

BRISTOL MAMMAL REPORT, 1975

By Roger G. Symes

The Mammal Section of the Bristol Naturalist's Society has been actively studying the mammals of the Bristol district since 1965 and reports have been published annually by the Mammal Recorder. The Bristol district has been taken to extend approximately from Berkeley in the north to Burnham-on-Sea in the south, and eastwards to the county boundaries of Somersetshire and Gloucestershire.

The Section's primary objective has been to ensure that the Bristol district was well covered for the Mammal Society's National Distribution Survey which recorded distribution on the basis of 10-kilometre squares of the National Grid. Preliminary maps were published in 1971 (Corbet 1971), all further information available up to the end of 1975 will be included in maps due to be published shortly and these should show that many species are indeed now well recorded in the Bristol area. The Mammal Section's own survey work has been recorded on the basis of 1 km. squares of the National Grid and distribution maps have been maintained for all species. It is intended that a set of distribution maps completed to the end of 1975 will be preserved, thus showing results collected during the period of the national survey and effectively being a "photograph" of the known distribution to that date. The local distribution survey work will continue, as will the collection of observations other than on distribution.

Some of the processing and mapping work was shared in 1975 between Mammal Section committee members, a reflection of the quantity and quality of observations becoming available annually. It is hoped that this will result in greater encouragement to members to concentrate on particular aspects. Miss E.J. Lenton has taken over the otter recording, A.F. Jayne is looking after badgers, and R.A. Burberry is dealing with hedgehog and fox records.

Nationally, mammals attracted considerable attention during 1975. The Conservation of Wild Creatures and Wild Plants Act 1975 gave protection to two species of bat; the dormouse which was to have been included was withdrawn from the schedule. This Act also made the use of "poisonous substances" against badgers legal, but only when carried out by staff of the Ministry of Agriculture, Fisheries and Food, or possibly by persons licensed by them, in connection with prevention of spread of disease. In practice, hydrogen cyanide gas generated from sodium cyanide gassing powder was used in Gloucestershire and Avon in connection with bovine tuberculosis eradication. Discussion of the advance of rabies across Europe and the importance of foxes, particularly in urban areas, as probable vectors of the disease should it reach this country, occupied substantial lengths of the correspondence columns of national and local newspapers. Similar debate followed the condemnation of fox hunting by the R.S.P.C.A. A publication of considerable interest to those involved in the study of mammals was of the first three chapters of a part-work "Techniques in Mammalogy" (Twigg & Brown 1975).

79 members and friends sent in records, newspaper cuttings, and other notes on mammals in 1975; thanks go to:-

R. Angles, J. Bainbridge, M.R. Ballard, Mrs. I. Barrett, Mrs. B.A. Bell, P. Bigwood, Mrs. S. Bigwood, R.L. Bland, A. Bradley, Miss M.E. Bridge, H.P. Buddery, R. A. Burberry, Miss A. Burton, J.F. Burton, P.J. Chadwick, M.J. Chapman, D.S. Church, M. Church, Miss E.J. Corrin, Miss B. Curtis, D.F. Davey, Dr. A.F. Devonshire, P.J. Dillon, Dr. J.W. Dodson, H. Dunnicliffe, Miss J. Edwards, J.L. Edwards, Mrs. S.C. Edwards, R.W. Emery, E. Evans, R. Evans, P.G. Farmer, Mrs. P. Fish, A. Forrest, P. Francis, E. Gadsby, T. Gaynor, M. Grimsdale, Miss K. Hall, R.G. Hamilton, H.R. Hammacott, R.F. Harknett, M. Harris, S.S. Harris, Miss C.J. Haskins, B.S.F. Hessey, Mrs. S. Hobbs, H.G. Hockey, D.E. Hole, K.B. Hughes, Mrs. J. Humphris, P.G. Isaac, A.F. Jayne, Mrs. P. Jayne, Miss H. Jayne, Mrs. S. Johnson, T. Jones, Miss R.C. Lee, Miss E.J. Lenton, M.J. Lewis, Mrs. P. Marston, D.J. Massey, J. Milton, Minstry of Agriculture, Fisheries and Food, W.A. Morgan, C.J. May, Miss B. Parsons, Dr. D.H. Peregrine, Mr. and Mrs. J. Phillips, E.W. Powell, Mr. and Mrs. J.G. Prince, F.H. Rawlings, Mrs. V. Seabright, T.B. Silcocks, E.S. Smith, Mrs. Somers, D.I. Spooner, B. Stanton, J.B. Stokes, Misses K.C. and J. Stubbs, J. Todd, Mrs. Todd, Miss J.B. Webb, Mrs. G. Weston, Miss C. Weston, D. Williams, Mrs. Wilkins, D. Witham, Mrs. Wright.

33 species of mammals (including a feral (?) polecat-ferret) were recorded in the Bristol district in 1975; no marine species were seen off the coast. Check list names and numbers are taken from Corbet 1969, except that the names 'ship rat' and 'common rat' are preferred as black and brown varieties of both these species occur.

1. HEDGEHOG. R.A. Burberry reports "Records were received for every month of the year, earliest sightings being on 9 January (SH) and 11 January (RAB) and the latest on 9 December (DH, HP). 19 live sightings were made and 57 animals were seen 'dead on road'. There were records from 24 new 1km squares. Young were seen on only 3 occasions, 12 June (RGS), 31 July (RAB) and 31 August (HPB). Four young seen on the last occasion were found dead a week later. Most records (16) were for October."

2. MOLE. 130 records including 49 new 1 km. squares. Most were of molehills but several moles were found dead during the very dry summer. A probable 'fortress' 1.2-1.8 metres across was seen in a waterlogged field after heavy rain (RGS).

3. COMMON SHREW. 22 reports including 11 new 1 km. records. 70 skulls were found in discarded bottles.

4. PIGMY SHREW. 7 records including a new 10 km. square record for ST77 (AFJ, RGS) and ST37 (JFB). Skulls were found in bottles, animals were found dead and trapped.

5. WATER SHREW. 6 records including 5 new 1 km. squares. Skulls were found in bottles, and live animals sighted.

8. GREATER HORSESHOE BAT. New 10 km. square record for ST77 (TG, EJL). Sightings of bats at various roosts were on 25 April, 17 May, 21 July and 17 August. 2 adults were seen in a roost in a house, one carried a ring of a type last used in 1962, indicating a minimum age of 13 years. The roost site was unfortunately in possible danger of modernisation and the Natural Environmental Research Council has been notified (EJL). M. Collins grilled the entrance to a mine on Dundry. This species was among those protected by the Conservation of Wild Creatures and Wild Plants Act 1975.

9. LESSER HORSESHOE BAT. One sighted at a roost on 25 April (AFJ) was our first record for ST76 although the Mammal Society has a previous one.

18. NOCTULE. A new 10 km. square record for ST47 (RGH - ident. RGS). This was a mature male found dead on 25 August at Wraxall.

19. PIPISTRELLE. A roost used in 1974 was reoccupied by 1 July. An adult male was found dead inside a diffuser fitted to a fluorescent light inside a building. The membrane of the right wing was torn between the 3rd and 4th digits.

21. LONG-EARED BAT. A female found dead on 29 October was a new 10 km. record for *Plecotus* species for ST36 (JT). This specimen was not critically checked for the possibility of being *P. austriacus*.

24. FOX. R.A. Burberry reports "There were 204 records, including 107 from new 1 km. squares. Most reports were for February (19 sightings) and May (25 sightings). A pair was seen mating in early February (AFJ). First reports of cubs was 16 April (RGS) - 2 litters close together. Subsequent reports were 3 May (EJL), 6 May (EJL) - 4 cubs, 8 May (AFJ) - 2 cubs, 16 and 27 May (AFJ) - 4 cubs, 14 May (PGF) - 1 adult and 6 cubs, and 15 May - 2 adults and 4 cubs (JH). Cubs were also reported in June (RGS, AFJ), July (RA, HRH, HGH), August (EJL), and September (RA). A fox was discovered living under a house in Henleaze on 12 February (RGS) and some were heard calling in January (RCL, JGP), February and March (RCL)."

27. STOAT. 9 sightings including a new 10 km. square record from Devon for ST01 (RGS). 8 new 1 km. squares added to map.

28. WEASEL. 29 records including 21 new 1 km. squares. Most records of animals seen "hunting" including one seen pursuing a field vole (HRH).

29. POLECAT - FERRET. One found squashed on road in south Avon. Markings showed this was not a true polecat but the domesticated polecat-ferret. We have no information on survival of escaped ferrets in the wild.

30. AMERICAN MINK. One new 10 km. square record for ST37 (EJL), and 4 new 1 km. records. Young (probably) seen in lair in a dry culvert on 6 July (EJL, JB), there were piles of scats and remains of 2 moles at the entrance.

31. BADGER. A.F. Jayne reports "95 records were received from 37 observers. 27 reports were of road casualties with peaks occurring in February (5) and October (6).

Cubs were reported from 6 setts (EJL, AFJ, CJM), two of which were known to contain two litters each. In one of these setts there was about 1 month's difference in ages between the two cubs in each litter, and in the other sett litters of two and three cubs were of approximately similar ages (EJL, AFJ). At least six setts in the Winterbourne area have become disused during the past two years, the reasons for this are not easy to understand as there is no positive evidence of human interference.

The records for 1975 included 29 new 1 km. square records for the local distribution map. A further 71 new squares containing badger evidence were found by representatives of MAFF during their thorough survey of approximately 40 square miles in the Thornbury area in connection with research into the problem of bovine tuberculosis in badgers."

32. OTTER. The Mammal Section's President, Miss Elizabeth Lenton, together with Miss Jean Webb published an account of their study of otters in Somerset carried on since 1971 (Lenton & Webb 1976). Miss Webb gave more detailed results of analysis of spraints from the study area (Webb 1975). She found that the main foods were eel and stickleback but that a wide variety of other vertebrate and invertebrate species were also taken. Both workers are to be congratulated on their researches. Otters were reported in 1975 from Somerset and north Avon.

34. GREY SEAL. No sightings reported on the Bristol area coastline. The Mammal Section's visit to Pembrokeshire in October found an unusually large number of pups on the mainland beaches (25). Rough seas prevented a visit to Ramsey Island so no estimate of pup numbers could be made there.

42. RED DEER. 4 new 1 km. square records from near the deer park at Berkeley (MAFF).

44. FALLOW DEER. Confirmed in the area around Berkeley - new 10 km. square ST69 (RGS), where evidence found in 6 1 km. squares. Slots in field beside deer park at Dyrham were a new 10 km. square record for ST77 (AFJ, RGS). A fallow buck roamed around the Clifton district of Bristol for 2 weeks before it was shot after breaking a leg.

45. ROE DEER. Sightings at Stock Hill plantation during April (MSFM).

47. CHINESE MUNTJAC. No confirmed records received.

53. BROWN HARE. Records including 10 new 1 kms. were mostly of adults, 2 of which were seen grazing a standing cereal crop on 29 May. They had eaten stems and leaves but damage was very local and insignificant. A juvenile was found dead on 27 July (AFJ). A form found on 19 April in rough pasture was partly dug out and the bottom was of soil with fur and claw marks (EJL). A government-sponsored bill to ban coursing of hares did not survive in Parliament.

55. RABBIT. 156 sightings included 83 new 1 km. squares. Described as "numerous" at Cold Ashton in May (AFJ, EJL) and as "common" at Doynton, Rangeworthy, Wick, Upton Cheyney, Chittening, Wraxall and in the Gordano Valley. Juveniles reported on 2 March (RGS) until 27 October (AFJ). 2 young found alive on surface on 28 May were "about 100 mm. long, eyes closed, no hair, and umbilical cords still visible" (JBW). A fox was seen to chase and kill a rabbit at Kings Weston (IB), and 2 "stops" were found dug out with much grey fur scattered (AFJ). A black rabbit was seen at Sand Point (RA), few such colour varieties have been reported previously. Myxomatosis was reported at Frampton Cotterell and Winterbourne on 16 February and at Swainswick on 1 November. Rabbits sighted at Winterbourne Down on 21 February were the first seen there since myxomatosis occurred in June 1974 (AFJ).

57. GREY SQUIRREL. 84 sightings included 39 new 1 km. records. An adult was seen being mobbed by a magpie (AFJ) and another was attacked 3 times by a carrion crow whilst running across pasture (RGS). Up to 3 individuals were reported to be living in a university building (DHP), and others were said to be resident in a granary on the docks at Avonmouth (BAB). A new drey in a oak tree found on 29 June was of green oak leaves (AFJ) and another consisting of mainly green copper beech leaves was found on 19 October (MC). There was speculation over the possible presence of red squirrels near Long Ashton, this has not been substantiated.

59. DORMOUSE. 11 records including one from 1972. Two new 10 km. squares, ST69 (RGS) and ST88 (AFJ), and 6 new 1 km. Records were of nuts opened by dormice, nests found, and live animals found. Unusually, none of the sightings was of an animal in hibernation. One dormouse was flushed from a nest on 31 August (SSH, AB) and a freshly-constructed nest was found on 25 April with considerable stripping of honeysuckle bark (RGS). Two adults ran out of a nest box put up specifically for dormice (JBW).

61. HARVEST MOUSE. New 10 km. square record for ST76 (EJL) (see map in Harris & Symes 1975), 5 new 1 km. squares filled. At one site in a field where no nests were found in 1974 there were 8 nests, at least 5 of which were thought to be breeding nests (AFJ). An intensive study was made at a site in the Cotswolds, breeding success did not appear to be as great as in 1974 (RGS, AFJ, SSH, AB).

62. WOODMOUSE. New 10 km. square record for ST77 (AFJ), and 17 new 1 km. square records. Mostly skulls found in discarded bottles, but several live animals were disturbed from old nests of various species of birds, up to 1.5m above the ground. One animal caught in a pasture was reported to be entirely blind (JFB).

63. YELLOW-NECKED MOUSE. Trapped alive at Cromhall and one found drowned in the bowl of a lavatory! (JH).

64. HOUSE MOUSE. 3 new 1 km. records including one trapped in an isolated barn.

65. SHIP RAT. *Rattus rattus.* Still present at Avonmouth.

66. COMMON RAT. *Rattus norvegicus.* 12 new 1 km. square records. One rat was seen swimming in a flooded *Spartina* bed at high tide at Sand Bay (RA). Extensive damage was caused to growing cauliflower plants at a market garden, stems were gnawed causing the plants to collapse (RGS).

67. BANK VOLE. All 12 records received were from new 1 km. squares, 2 were from new 10 km. squares ST77 (AFJ, RGS) and ST88 (AFJ).

68. WATER VOLE. 12 new 1 km. records. One vole fed on bread being used as fishing bait (DSC) and another was seen to climb up to 2m of overhanging elder shrub, feeding on elder berries (HGH).

69. FIELD VOLE. One new 10 km. square record for ST77 (AFJ, RGS) and 13 new 1 kms. Many skulls were found in discarded bottles and several nests discovered, mostly under sheets of corrugated iron (AFJ).

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Field & Moor,
by John Burton

Kingsmead Press, Bath.
£2.50. 1976

This book contains twenty-two short essays which were first published in the South Avon Mercury. They are well worth reprinting: written for a general audience, they nevertheless contain a great deal of fascinating information, conveyed in a clear and readable text which is complemented by a number of ingenuous but effective sketches of animals and plants, also by the author.

A survey of some of the titles will give an idea of the scope; they include "Why conserve the Gordano Valley?", "Merlins and Buzzards", "The Severn Bridge Whale Mystery", "Winter Moths", "Grasshoppers of North Somerset" and "The Fascinating World of the Stinging Nettle".

I recommend this little book to all Bristol Naturalists, and hope that they will enjoy reading it as much as I did. If you did not know that there are Emperor Moths in the Gordano Valley; that stranded whales are "Royal Fish" and their disposal is the responsibility of the Receiver of Wrecks in H.M. Customs and Excise; that there are two kinds of Burnet Moths on Wain's Hill; or that Oak Eggar caterpillars do not feed on oak leaves - then obtain a copy as soon as you can.

R.A.A.

AVON BIRD REPORT, 1975

COMPILED BY THE EDITORIAL COMMITTEE OF THE
B.N.S. ORNITHOLOGICAL SECTION

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THE YEAR. The extremely mild weather of December 1974 continued into January, with abundant rain and westerly winds. There were unseasonal records of Gannets from many British coasts, including one freshly dead on Weston beach on the 3rd. After some years with no records of Great Northern Diver, one appeared at Chew Valley Lake, and two or three others were present from time to time later. A few Little Auks were found in England following the gales, and one of these was at Blagdon reservoir on Feb. 1; a report of another found dead at Michaelwood on the 7th appeared in *British Birds*, but this record has not otherwise reached us. On Jan. 28, one was recorded at Brean, just beyond the Avon boundary.

Early in February, anticyclonic conditions became established and ended a long period of unsettled weather. Even with winds from the east or north-east, the weather continued mild, and there was little rain. In the mild winter, many summer visitors lingered so that reports of Blackcaps and Chiffchaffs were more frequent than in the recent mild winters, and of the many Firecrests that over-wintered in the country, some were in Avon. Of those noted at Chew Valley Lake in December 1974, two were ringed in February. (One of these was retrapped there in November - an interesting event, as the species is extending its breeding range in England.) Conversely winter visitors were fewer in numbers than usual: few Bewick's Swans were noted (at the Wildfowl Trust's Gloucestershire headquarters 259 individuals were identified, about half the usual total); no Peregrines came to winter; no large flocks of Fieldfare or Redwing were reported; Little Stints left early, and our one late winter bird, seen on Feb. 27, was the only one reported that month to *British Birds*. Mallard flocks dispersed very early. Reports of early nesting included Blue Tits at Henbury on Feb. 19.

Cetti's Warblers have been spreading northward through Europe during the last fifty years. Several were trapped in S. England in 1968, including one at an undisclosed Somerset location, and since then records have extended along the whole south coast. A few have bred in Kent since 1971, and in 1975 also in south Devon. One was trapped and ringed at Chew Valley Lake in February, and was last noted there on April 20; this constitutes the first Avon record. The Chew reedbeds would be an ideal breeding habitat for the species.

March was unsettled and mild at first, and small numbers of summer migrants reached the country early. A Swallow was reported at Portland Bill, Dorset on the 1st and a House Martin at Axbridge in Somerset on the 9th. Then cold weather set in, delaying the main migrant falls. Our own first reports of Sand Martin, House Martin and Swallow were on the late dates of April 4, 8 and 11 respectively. Snowfalls in Scotland and E. England on April 8 and 9 heralded a return of the mild weather, though with showers, as air from the Atlantic moved over the country. May was rather cool, winds from the north-east persisting for most of the month. A depression moving east brought a wet spell from the 12th to the 16th.

The northward Whimbrel passage was small and late, with few seen anywhere in the country until late in April; locally, it was two to three weeks later than usual. There was a noticeable peak of Common Sandpiper numbers in May, with up to 13 at Chew (and 38 at Cheddar reservoir, Somerset, on May 11). A considerable passage of Common/Arctic Terns is referred to again later. In contrast, there was a most unusual dearth of Little Gulls, with only one bird reported in Avon; again, this appears to reflect a general situation.

As in 1974, Gadwall had a good breeding season, with 138 pulli from 21 broods at Chew Valley Lake.

In the last few days of May, further arctic air flowed over the country, giving exceptionally wintry conditions on the first three days of June (with small snowfalls in many parts of Britain). On June 5 a spectacular change to summer weather occurred as an anticyclone developed over Europe. Warm winds between east and south resulted in temperatures locally up to 27°C.

Redshank, recorded on Nailsea Moor during the two previous breeding seasons, bred there successfully. Whitethroats continued their recovery from the 1968-9 'crash', and in parts of Avon seem to have reached their former abundance, though they are still well below this elsewhere in the county. Records included 17 at Hallen on May 9; and 14 were counted at Brean Down, Somerset, on the 18th. The Reed Warbler colony that appeared on Nailsea Moor in 1973 and expanded in 1974 received a check when part of its reed-bed habitat was destroyed during mechanised rhyne-clearing operations facilitated by the dry summer. Sedge Warblers, formerly present there in some numbers, were very few, as had been the case in 1974.

A notable event was the breeding of a pair of Red-backed Shrikes, in a locality which must remain undisclosed for the time being. It is, as far as we are aware, the first breeding record for the Avon County area since 1958; but we have been given to understand that pairs were located in what is now south Avon twice during the 1960's (we have no further details). Notable also was the occurrence at Chew Valley Lake of two White-winged Black Terns in June, the eighth and ninth for the Avon area, and the first outside the months of August and September.

With only a short break, the high temperatures lasted until thundery outbreaks on July 7 and 8; another anticyclone moved in on the 25th, resulting in an exceptional heatwave which persisted to mid-August, with temperatures up to 32.5°C on Aug. 8. There was a cool period after another week, but temperatures rose again in the last days of the month. The total rainfall from April to August was under 70% of the normal figure.

There were some interesting records of Swifts in July, for which the reader is referred to the systematic list below. A Spotted Crake at Chew Valley Lake on July 17 was the eighth in ten years - there were single birds also in 1969, 1971, 1972; and two in 1967 and 1973. By the end of July, the Canada Goose flock had grown to 19 birds, following the rearing of five young and the arrival of six more adults. In August another White-winged Black Tern appeared at Chew Valley Lake, where it remained for some days. Eight Quail were reported from Marshfield, the stronghold of our tiny colony of this scarce and elusive summer visitor.

The summer weather broke after the first week of September, and on the 13th a depression in the English Channel brought gales and heavy rain to the south of the country, including Avon; the 14th was unusually cool, with a northerly air stream, and the rest of the month was changeable at first and then in the last week very disturbed, with rain and S.W. gales.

Several wader species were scarcer on autumn passage than in 1974. Little Ringed Plovers returned to their usual trickle after the higher numbers of 1974. Grey Plovers were again fewer than in 1972 and 1973, and both Black-tailed and Bar-tailed Godwits were relatively scarce. Even Ringed Plover numbers appeared to be somewhat smaller than usual. It is hard to be sure of the reason for these changes: they could imply a poor breeding season in the north or a shift in the pattern of movement, or both. It is noteworthy that further west, at Steart in Somerset, there were up to 1,200 Black-tailed Godwits - at least the usual number - in August, and the unusually large number of 200 Grey Plover on Sept. 21.

The autumn tern passage reversed the spring pattern; there was a marked movement of Black Terns, but Common/Arctic Terns were at their usual low level. A detailed study of the numbers of the two species over the last ten years shows no obvious pattern of relationship, either between spring and autumn or between one and the other species.

From late August to November the autumn was marked by the arrival of a stream of transatlantic rarities, as well as many from the east, and Avon received its share of these. The unprecedented number of 62 Buff-breasted Sandpipers were scattered over Britain and Ireland after a broad-front Atlantic crossing; three or four were present at Chew Valley Lake at various times in September; single birds were also seen on the Wilts-Glos. border on the 11th, and one was at Cheddar Reservoir on Sept. 3. Two Pectoral Sandpipers were present at Chew Valley reservoir at the end of the month and the beginning of October, one also visiting Blagdon Reservoir. The rarest visitor to our area was a Wilson's Phalarope, also at Chew in mid-September; it was one of four in the country, and the second for the county area (the first was at Chew in September 1967). Our only unusual eastern visitor was a Purple Heron, again at Chew Valley Lake, on Sept. 28; it was one of six, an unusually large number for the autumn, scattered from Cleveland to Cornwall.

The last three months of the year were dry. Much of October was mild, with an easterly air stream, the result of an anticyclone over the Baltic. Atlantic depressions moved in at the end of the month, and rather similar conditions prevailed to the end of the year, which saw reservoir levels well down and no hint of hard weather.

Chew Valley Lake continued to provide interesting records, with an Arctic Skua on Oct. 7 (the species occurs less than annually, and seldom as late as October); a Red-breasted Merganser, which also visited Blagdon, in November; and, in the same month, a Long-tailed Duck, a late Common Tern and a Brent Goose that was still present in December. A Red Kite was reported on Nov. 2 at Chewton Mendip, two miles beyond the county boundary, flying in the direction of the reservoirs, but it does not seem to have been observed later.

On Nov. 6, a late Garden Warbler was noted at Chew Stoke, and on Dec. 22 a Long-eared Owl was found at Lawrence Weston, Bristol. This was the first reported in Avon following a major invasion by the species from the continent in the second half of October and November; we shall have more to say on the subject in our next report.

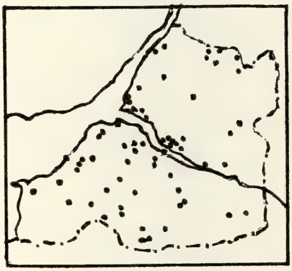
The mild autumn produced no great numbers of Redwings or Fieldfares, as had been the case the previous year. Goldcrests and Long-tailed Tits continued to thrive, their population levels showing the effects of the long series of mild winters.

DUCK COUNTS. For some years duck counts from the reservoirs have shown very large differences, not only from day to day on a given water but also from one observer to another on the same day at the same place. Sometimes the discrepancies are due to differences in time of day, when appreciable duck movements have taken place between counts. In other cases, they are almost certainly the result of over- or under-counting. There are two major likely causes for this. First is the sheer difficulty of achieving proper cover of an area like Chew Valley Lake, with its free water surface when full of over 1,200 acres, and its lengthy perimeter (over ten miles); bearing in mind, too, that there is no one vantage point from which the whole area may be covered. A second likely cause is the known fact that a given observer may systematically over- or under-count without being aware of the fact. Results presented at the International Bird Census Conference at Oosterbeek, Holland in 1970 showed this to be so not only for amateurs of varying degrees of experience, but also for very experienced professionals whose duties included regular counting.

In the circumstances, we do not think it would serve the cause of ornithology if we merely quoted the maximum figures that are reported for a given water. If any readers are inclined not to agree, we can only add that the largest counts do not always come from the same observers, and that those who produce lower figures may be equally certain as to their correctness. We have therefore continued to assess duck populations and their changes mainly by reference to the National Wildfowl Count data for our waters, which have the merit of a degree of consistency in the way they are made and in the observers involved. Other data are, of course, taken into consideration; and they are especially useful when, as sometimes happens, the national counts are not done simultaneously but over two or three days, or when major changes have taken place between two national count dates.

LESS COMMON BIRDS. It is now several years since breeding, or probable breeding, of Lesser Spotted Woodpecker or Dipper was recorded in the Frome Valley, Bristol. It appears that Redstarts have moved into the present category in the last few years, in accordance with a national decline. However, it is encouraging to note that reports of Barn Owls have increased. There were no Bittern records in 1975, for the first time since the species began wintering at Chew Valley Lake in December 1963.

COMMONER BIRDS. The commoner birds present the problem that often insufficient information is available to permit any worth-while statement about their numbers to be made. As an instance, the sketch map here shows all the 1975 reports of Grey Wagtails in Avon. This certainly under-states their true abundance, since they are to be found in any suitable habitat. It does, however, serve to show that they are widely spread throughout the County, and the perceptive eye will notice clusters of occurrences in the city of Bristol, where there have been sightings in such unlikely places as Queen's Road. Only in rare cases can definitive figures be given for one of the commoner birds, and the national census of Rookeries carried out in 1975 by the British Trust for Ornithology provides one such opportunity. The figures for Avon (subject to possible minor changes on re-scrutiny of the data) were as follows:



North Avon: 3,245 nests in 172 rookeries;
South Avon: 3,054 nests in 193 rookeries;
County total 6,299 nests in 365 rookeries.

There is evidence of a decrease in Swallow numbers here and there in the county. It is not easy to assess the situation, as some local decreases are clearly due to changes in the farm buildings involved - either their demolition, or their renovation with the provision of well-fitting doors and windows. On the other hand, Swallow numbers have declined nationally, according to the index based on the B. T. O.'s Common Birds Census (Bird Study, 23, (1), p. 18). From a fairly steady level in the early 1960's, the index rose more or less steadily to a peak in 1968; since then it has fallen almost regularly, with a particularly marked drop from 1973 to 1974 (the last year available), leaving it at a value less than half that of 1968. The same source shows that three of our smaller resident species have benefited in a spectacular fashion from the run of mild winters; that our local situation is in full accord with the national picture is a matter of common observation, even though we can give no local data in numerical form. Taking the datum year of 1966 as 100, the index values for the three stood in 1974 at the following levels:

	Farmland Index	Woodland Index
Long-tailed Tit	241	212
Wren	328	252
Goldcrest	-	362

The absolute numbers are equally interesting: in 1974, Wrens were the second commonest birds (not far behind Blackbirds) on the 78 plots of the farmland sample, and were the commonest species (exceeding Blackbird and Robin by about 10%) on the 67 woodland plots. Goldcrests were the tenth commonest woodland species, narrowly ahead of Coal Tit.

ESCAPES FROM CAPTIVITY. From time to time exotic birds escaping from collections can provide puzzles for the unwary, and additional interest for the seasoned observer. Some recent examples have included a Red-billed Teal at Chew and a White Stork at Kingston Seymour in April 1974; another White Stork from Bristol Zoo, at Chew for most of August 1974; Chilean Flamingo on the coast throughout late 1974 and all 1975, and sometimes (the same bird?) also at Chew; a Snow Goose at the latter place in August 1975; and a pair of Budgerigars clearing out a nest-hole at Frenchay in February 1975.

CONTRIBUTORS' NAMES are given at the end of the Systematic List.

BLACK-THROATED DIVER

SA One at Blagdon Reservoir on March 9 (PJC), assuming summer plumage - probably the bird seen at Cheddar reservoir (Somerset) between January 16 and March 24.

GREAT NORTHERN DIVER

SA One at Chew Valley Lake throughout January - March, with a second reported on Feb. 15, Mar. 1, 8th, 9th and 23rd; two from April 3 - 26 and single birds, April 27 and May 10. One at Blagdon reservoir, March 10.

BLACK-NECKED GREBE

SA One, Chew Valley Lake, Sept. 16 - Nov. 1 (RMC, KEV *et al.*).

SLAVONIAN GREBE

SA One was noted at Chew Valley Lake on several dates between October 4 and 13th (KEV, RW *et al.*).

GREAT CRESTED GREBE

All Avon waters were surveyed May 31/June 1 for the B.T.O. Census, giving a total of 145 birds on 7 waters (13 waters with none). NA:- one off Chittening on April 12 (RGT) was the second recorded this century within the Bristol City boundary. SA:- at Blagdon and Chew Valley reservoirs brood sizes were very small - 7 in five broods and 51 in 35 broods respectively. A brood of three was reported from Hunstrete Lake.

LITTLE GREBE

NA Breeding records only from Tortworth Lake (2 broods) and Hoar Gout, Avonmouth, where three pairs reared five or six broods.

SA Birds were noted on various waters and rivers, but the only breeding records were from Hunstrete Lake (brood of two) and the reservoirs (3 broods, Blagdon; c. 15, Chew Valley; one, Litton).

FULMAR

SA Reported April to August: eleven records from Weston Bay (max. of eight on June 2) and three from Sand Bay (single birds, June 3 and July 23, and two, Aug. 21. One, Chew Valley Lake, April 4.

MANX SHEARWATER

SA Movements in the Channel were more concentrated than for some years, with all records between May 25 and July 23, and larger than usual numbers. Peak counts off Sand Point were 505 on May 25 (RA), 94 on June 17 and 58 on July 22 (TB); in Weston Bay area, 600 were counted on June 28; 350 on July 7; 121 on 15th and 113 on 25th (BR et al.). Eleven were seen off Steep Holm on May 30 (BLK).

GANNET

There were no reports from NA and only eight from SA; in contrast, there were sightings on 34 days in 1972 and 16 days in 1973 and 1974). A dead adult was found on Weston Beach on Jan. 4. All other records were of birds seen off Brean Down, with up to 14 on July 7 and August 6 (BR).

CORMORANT

Coastal counts included the following from NA: up to five off Oldbury in June and seven off Chittening in September. Counts at Chew Valley Lake included over 60 in January and 70 in December. These figures suggest that the Steep Holm breeding colony is thriving (we have no details from Steep Holm during the breeding season).

SHAG

SA Three were seen on Sept. 28 from the tip of Brean Down, flying south-west into Somerset waters (PJC, BNS Junior Section).

GREY HERON

NA A new heronry, with two nests, was located in Dodington Park, south-west of Chipping Sodbury.

The table given in the 1974 Report contained a mixture of definite, probable and possible breeding. A corrected version is given below, using the convention of definitely occupied nests plus half the number probably occupied (Bird Study, 3 (1956) pp 44-5).

Heronry	1970	1971	1972	1973	1974	1975
Uphill	7	9	8	14	14	16
Cleeve	57	56	?	48	51	38
Weston Moor				1		
Portbury			3*	3	5	13
Newton Park	20	10	13	11	17	12
Dodington						2
Avon total	84	75	24+	77	87	81

*information received since 1974 Report

PURPLE HERON

SA One was observed at Chew Valley Lake on Sept. 28 (DB, PD). Record accepted by British Birds Rarities Committee.

DUCK RECORDS

See note in Foreword on the assessment of duck numbers.

MALLARD

The mild weather led to a rapid dispersal from c.1,200 at the reservoirs and coast in January to c.600 by mid-February (both well below the 1974 figures). Nests or broods (63) reported from 15 localities. The usual large post-breeding gatherings formed at the reservoirs: well over 2,000 birds were present in the county from August to October, with some decrease in November and December.

TEAL

NA Many reports from coast, Tortworth Park Lake, Hoar Gout (Avonmouth) and small pools and marshy areas in the Severn Vale. Few large numbers, except between New Passage and Aust, where 100 were noted on March 1, and 150 in October, with 112 on Dec. 6th. At Hoar Gout there were 65 on March 1 and on Nov. 16, and 60 on Dec. 6th.

SA Some 575 present in January, but fewer than 250 by March. One or two summered at Chew Valley Lake, with no evidence of breeding. Rapid autumn increase to some 525 by end August, 930 on Sept. 13 and almost 1,200 by mid-October. Fall to c. 750 by late November, when numbers at Cheddar reservoir (Som.) were doubling to 1,400.

GARGANEY

SA First arrivals: a pair at Blagdon res. on May 6; at Chew Valley Lake, a male on 18th and three (2 males) on 20th. At least one pair summered (no young seen). Autumn numbers were relatively high - 8 at Blagdon on Aug. 2, and at least 12 on 15th (AM, KEV), also up to six at Chew Valley, with nine on Aug. 29 and ten on Sept. 12 (KEV).

GADWALL

NA Two off Chittening on Oct. 29 and one, Hoar Gout, Dec. 20th.

SA Probably only 45 in area up to April 6; then an influx, with a peak of 112 at Chew Valley Lake on 17th (KEV); 21 broods there later, and one at Blagdon. Nine, Nailsea Moor, Aug. 10 (CDO). KEV reported high counts from Chew in August, with peak of 275 on Sept. 12; but on 13th the total there and at Blagdon was 110 (RMC, AHD et al.). Later maxima were 63 in October and 115 in December.

WIGEON

NA Only report of over 16 was of 100 at New Passage, March 1 (RGT).

SA A poor year; fewer than 875 during January and February, and even fewer in autumn after slow increase from late August: 88 in mid

October and 33 a month later; 405 at Chew Valley, Dec. 13 (when no count received for Blagdon). Few coastal records, all of fewer than 20 birds except for 75 in Weston Bay on March 4th.

PINTAIL

No records received from NA; in SA, one was seen at Victoria Bridge, Bath on April 9, but most records came from Blagdon and Chew Valley reservoirs: 41 at Chew, Jan. 11, and 25 at Blagdon on 12th; 22 at Chew Valley Lake in February and six at each reservoir, March. At least one male summered, and five were present at Blagdon from July 9 onwards. Autumn maximum was 33 (25 at Blagdon) on Oct. 11; thereafter, not more than 16 observed on any date.

SHOVELER

NA Only three records: two at New Passage on March 1; one at Aust on Oct. 4 and five at Hoar Gout, Avonmouth on Dec. 20th.

SA Some 100 at the reservoirs in January, increasing to 180 by mid March. A few stayed through the summer, but there was no proof of breeding. Autumn counts showed huge differences - see Foreword - but at least 330 were present in October - November. Up to 20 at Barrow Gurney reservoirs, October - December; the species is not often recorded there.

RED-CRESTED POCHARD

SA A male in eclipse was reported at Blagdon reservoir from Sept. 24 to Oct. 11, and a female was seen on R. Avon, Keynsham, Dec. 26.

SCAUP

NA A male was noted off Chittening on Oct. 12 and 13 (CJB,RGT).

SA Single females were reported at Chew Valley Lake on March 1, April 17 and Nov. 1, with three females or immatures on Dec. 20: these had probably been disturbed from Cheddar res. by sailing.

TUFTED DUCK

NA More than usual number of reports. Up to 26 at Tortworth Park Lake in January, nine in April and six in June; one pair bred (five ducklings). Up to seven at Hoar Gout, Avonmouth, February - March and October - December. One in Bristol harbour on Feb. 10, after fog. Four reports of one or two at St George Park Lake, Bristol, with seven theee in February and December.

SA No full totals are available for January or February, but at least 325 were present at Chew Valley Lake on Jan. 1, and 385 on

March 1; area total some 330 on March 15th. The usual April influx occurred, with 530 at Chew on the 17th (but no counts available from other reservoirs). Summer counts were high, but the breeding season was poor: 19 broods at Chew, five at Blagdon and two at Litton. Up to 510 in area in August, but later totals were in the normal range of 250-350, with 377 reported at Chew on December 20th.

POCHARD

NA Up to four pairs at Hoar Gout, February to April 12, and up to nine, Oct. 18 to year-end. Up to 25 at Tortworth Lake in January.

SA January counts not simultaneous, but area total was at least 850; only 40 by mid-March. No breeding records. 93 at Chew Valley Lake, June 13 (SBE); area total over 500 by end September, when most moved to Cheddar res. (Som.); no more than 170 in October - November (when 1,000 at Cheddar) but 470 at Chew Valley Lake on Dec. 20th.

GOLDENEYE

SA Four reports of 40-47 at Chew Valley Lake, January to April; otherwise the combined reservoir total reached this level only on March 9th. Three at Blagdon reservoir on May 6, last seen on the 10th at Chew, where an immature male arrived on June 15th. Autumn birds arrived from Sept. 12, with eight a month later and 34 in early Nov., then little change to year end except on Dec. 22 (when 52 seen -KEV).

LONG-TAILED DUCK

SA An immature male at Chew Valley Lake from Nov. 1 was joined by two more immatures (one female) by the 28th; the three stayed to Dec. 14, and thereafter two were noted to the end of the year.

COMMON SCOTER

NA A female at Hoar Gout, Nov. 20 - Dec. 6 (RLB, RGT) was the 6th record for NA area since 1900 (more frequent further up estuary).

SA Noted in Weston Bay area, March 22 - April 29 (up to 35), July 5 - Aug. 2 (up to 11) and Nov. 22 (four). Nine off Sand Point, May 15; one off Steep Holm, Oct. 19th. Two males, Chew Valley Lake, April 7, a female, 11th-14th; and five males there, July 26th.

RUDDY DUCK

SA Reservoir total some 62 in January and 50 in February; then a quick fall. Three broods (1, 2 and 1) at Chew Valley, the last one, recently fledged, seen on Sept. 2nd. Up to 36 at reservoirs, September to October, 96 (all at Blagdon) by Nov. 15, and 111 (DEL) on the 26th. Peak count was 124 (101 at Blagdon - SBE) on Dec. 20th.

RED-BREASTED MERGANSER

SA A female or immature bird was seen at Blagdon reservoir on Nov. 15 (AHD) and at Chew Valley Lake from 16th to Dec. 7 (BAO,CDO *et al*.).

GOOSANDER

SA Barrow Gurney resrs.: one, Jan. 18 and a pair, Feb. 23rd. At Chew Valley Lake, reports of up to 19 in Jan. and Feb. (but flock of 26 on Jan. 24 - DEL), 17 in early March, 14 by end of month, six on April 3 and one as late as the 12th; first autumn record: one at Chew, Nov. 2; 13 by 20th, 20 on Dec. 13, and peak of 26 a week later.

SMEW

SA The male present at Chew Valley Lake in December 1974 was noted to March 29; a female joined it on several dates in February, and a second male on March 8th. A male was seen at Blagdon reservoir on Feb. 22nd. A male arrived at Chew on Nov. 12 and stayed through the winter, a female being seen occasionally with it from Nov. 15th.

SHELDUCK

Movements and discrepant counts make totals of adults unclear. Best estimates are given. NA: Spring population 120-170; some 50-60 ducklings reached coast. SA: In usual survey area, from R. Avon to Birnbeck Island, spring population 300-350; some 180 ducklings reached coast. Noted all year at Chew Valley Lake, with up to nine in spring, and eight, November - December. A brood of 10 hatched, one or two survived. An immature present, Blagdon res., August.

GREYLAG GOOSE

NA A pair reared five goslings at Tortworth Park Lake.

SA The bird, probably not genuinely wild, present from November 1975 was reported on many dates to April 27; one present also from early July to Sept. 3, and Sept. 24 to Oct. 13th.

WHITE-FRONTED GOOSE

Few records: three to N.E. over Hallen (NA), Feb. 2; one at Chew Valley Lake, Feb. 20 and four, March 1st. Heard over Bathampton, Dec. 6th; fifteen up-river, Chittening (NA), on 13th; nineteen over Barrow Gurney on 14th.

BRENT GOOSE

SA One, of the dark-bellied form, was present at Chew Valley Lake from Nov. 15 - 30, and on Dec. 7th (many observers).

CANADA GOOSE

SA At Chew Valley Lake the eight birds present since July 9, 1974 remained; two broods (of 2 and 3) were reared. On July 26, six more birds arrived and the total of nineteen remained to the year end.

MUTE SWAN

NA All breeding reports received were from Bristol: Eastville Park (1 brood/3 young), St George Park (1/3) and Hoar Gout, Avonmouth (no young). Largest herds reported were 33, Bristol Bridge, Jan. 4; 40 on Feeder Canal, Oct. 30, also 51 on Dec. 19 and 46 on 28th.

SA Bred at Blagdon reservoir (2 broods, 13 young), Chew Valley Lake (6/21), Nailsea Moor (1/2), Kenn Moor (2/11), Portishead Lake (1/8); also two nests on Kennet & Avon Canal between Bath and Bathampton. Largest numbers reported: 79 at Chew Valley Lake, Aug. 11; 68 at Blagdon reservoir, Aug. 15 and 20 on R. Kenn on Dec. 25th.

BEWICK'S SWAN

NA Thirteen were present at Northwick Warth, March 15 and 16th.

SA At Chew Valley Lake up to 21, including three juveniles, were noted on seven January dates, and two adults with two juvs. on Feb. 8th. Up to 14 were present one nine dates in October, and 14 also, including seven juvs., in November. In December up to six were seen on three dates. At Blagdon six were noted on Oct. 23, six including four juvs. on Nov. 23 and eight on Dec. 23rd. The only reports from elsewhere were of 5 (2 juvs.) flying S.W. from Sand Point on Dec. 16 and of 30 on Kenn Moor, Dec. 25th.

BUZZARD

Distribution closely follows main woodland area from Weston E. along N. edge of Mendips, E. of Chew Stoke (ST66), S. of Bath, and S. Cotswolds. Noticeably few records from 10-km squares ST67, ST68 and ST78.

NA Breeding season records from Compton Greenfield, Cromhall, Dyrham and Doynton. Bred at one site and (unconfirmed) at second. Single birds seen at Rockhampton, April 28; Inglestone Common, May 4; near Tockington in May and Stoke Park, Bristol on June 13th.

SA Nineteen breeding-season records from 12 areas, with breeding proved at two. Outside breeding season, 46 records; one near Bath on Sept. 21 was of five birds together (AAC).

SPARROWHAWK

Breeding season reports from 38 localities (13 in NA) with breeding proved in seven. Distribution similar to that of Buzzard but more widespread.

MARSH HARRIER

SA Single females observed at Congresbury, April 28 (RBT) and at Chew Valley Lake on May 23 (AGB per N.J.Dymond) and 27th (DEL).

HOBBY

NA Single birds noted at Pipley Bottom, Bitton on Aug. 26 and at Chipping Sodbury on Sept. 15th.

SA Reported from three areas in breeding season. Single birds at Middle Hope, July 1; Stanton Prior, Aug. 23 and Pensford, Sept. 6th. Several sightings at Chew Valley Lake in first half of September.

PEREGRINE

NA A female, Aust, Sept. 29 (JD); one, Milbury Heath, Nov. 27 (JH).

SA Single birds, Steep Holm, Sept. 14-15 and 19 (AJP); Axe Estuary, 22nd (TB); Chew Valley Lake, Nov. 15 (RMC , DEL, SBE) and Woodspring Bay, Dec. 14 (GS).

MERLIN

NA One record - a female at Chittening, Dec. 26-27 (NTL, RGT).

SA Single birds noted at Chew Valley Lake, Feb. 2 (DB), March 29 (N&LT) and Nov. 26 (DB); Hartcliffe, Bristol, Feb. 5 (DP) and March 4 (PJC); Sand Point, Feb. 8 (TB) and Nov. 11 (RA, TB); Axe Estuary, March 28 (RA) and Clevedon coast, Dec. 10 (HRHL).

[LANNER

SA An immature bird at Chew Valley Lake, Dec. 3 to end of year, was at first mis-identified as a Peregrine. Considered to be a Falconer's escaped bird, though it appeared to carry no jesses(KEV).]

KESTREL

Widely reported from most of county. Breeding-season reports from 114 one-km squares (62 in NA) with numerous records at other times, especially along main roads and motorways. Records within the Bristol City boundary suggest 12-13 pairs in breeding season (cf. 12 pairs in 1974) but nesting proved at only four sites: University Tower, Chittening and Eastville (NA) and old airport, Whitchurch (SA). One left Steep Holm to S.W., Sept. 13 and two singles to S.E on 16th; two, same place, 17th - 19th.

RED-LEGGED PARTRIDGE

NA One, Marshfield, April 7th. Four, including two juveniles, at North Stoke on July 30th. Also present at Marshfield in July.

SA Breeding season records from Bleadon, Charterhouse and Queen Charlton.

PARTRIDGE

NA Noted in breeding season at Filton and at Marshfield.

SA Single birds reported from Chew Valley Lake, Compton Dando, Marksbury, Publow, Nailsea (first seen for 3 years - HRH) and Portbury. Pair with ten young, Stanton Prior, May 6th.

QUAIL

NA Heard in breeding season at Tormarton (one - NJC) and at Marshfield (up to eight); also nearby at West Kington (Wilts).

SPOTTED CRAKE

SA One at Herriott's Bridge, Chew Valley Lake on July 17 (BS).

WATER RAIL

NA Winter reports from Aust and, in Bristol, Chittening, Hoar Gout and Wickham Glen (where not previously recorded - BLK).

SA Noted at Chew Valley Lake, Nailsea Moor, Sand Bay and in Gordano Valley - only the latter report was in the breeding season.

MOORHEN

Widely distributed. Peak count at Chew Valley Lake, 142 on Oct. 17 (KEV). Two, Cumberland Basin, Bristol, May 21 and one near Bath Bridge, Bristol, Dec. 29th.

COOT

NA Bred at Hoar Gout (Avonmouth) and Littleton Pits.

SA Pair bred, Portbury Wharf. At reservoirs: Blagdon, 24 broods (68 young), Chew Valley 55(126) and Litton 8 (33). A partial albino noted from time to time at Blagdon, Chew Valley and Cheddar res. (Som. (Som.) from late August onwards was probably that seen each winter since late 1972. Table shows peak monthly counts at reservoirs.

	Jan	Feb	Mar	Apr	July	Aug	Sep	Oct	Nov	Dec
Blagdon	810				880	1645	1920	1150		
Chew V.	1500	600	580	460	1300	1450	635	190	390	390

OYSTERCATCHER

NA Up to nine, Chittening to Severn Beach, January - April 12th. Present again from June 1, with up to 40 in Sept. and Oct. then 24.

SA Noted on coast, Jan. 1 - May and July - December, with max. counts of c.45, Sand Bay, late January and c.60 end October; 80, Axe Estuary and Weston Bay, late January, and 200, early October. At Chew Valley Lake one was seen in March and up to nine, July 31 and August. Six, Blagdon reservoir, Aug. 2 and one in October.

LAPWING

No reports of large weather movements. NA Breeding proved at Avonmouth and Tog Hill, Cold Ashton. First autumn flock noted at Hallen on June 29th. Largest counts: Northwick Oaze, with 1,500 in January and 400 in July rising to 750 in August and 1,000 in December; 500, Westerleigh Common in February and 1,600 at Marshfield, August. SA Breeding proved at Queen Charlton, Clutton, Blagdon and Chew Valley reservoirs, Nailsea and Kenn Moors and Portbury Wharf. Largest counts from Axe Estuary (1,500 in January) and Chew Valley Lake, with 1,000 in January and 250 in July rising rapidly to 2,000 - 2,750 in August and then 750 - 1,000 for the rest of the year.

RINGED PLOVER

The autumn passage was distinctly smaller than in recent years. The table shows the monthly peak counts in the main areas: (a) Sheperdine to Oldbury; (b) Oldbury to Littleton; (c) Severn Beach to Chittening; (d) St George's Wharf; (e) Clevedon to R. Yeo; (f) Sand Bay; (g) Weston Bay; and at the reservoirs: (h) Barrow Gurney; (k) Blagdon; (l) Chew Valley Lake.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(k)	(l)
Jan.			75			50	62			
Feb.			100		7	42	52			
March			40			22				
April			30	12						1
May			112	50		69				1
June			85							
July			14				2	1		6
Aug.			300	95		300	146		8	29
Sept.	4		300	32	12	60	116		3	49
Oct.			100			40	58			54
Nov.			65	1		14	52			
Dec.			54			120	53			
	NA			SA						

LITTLE RINGED PLOVER

SA Chew Valley Lake: up to eight, mostly immature birds, present from July 26 to Aug. 11. Single birds also on Aug. 18, Sept. 3, 18th, 25th and 30th; and on late date of Oct. 5 (RJP). At Blagdon reservoir, an immature bird on Sept. 7 and four adults on the 13th.

GREY PLOVER

As in 1974, numbers were low even during the autumn passage. NA Present, Chittening - Severn Beach, March 31 - June 1 and Aug. 30 - December; up to eight, Aug. 30 - Oct. 14, otherwise singles.

SA One or two at Sand Bay in January and June 8 - Sept. 21, then up to 12 from Sept. 23 to end of year. Three, Clevedon, Sept. 28 - Nov. 1st. Up to three at Chew Valley Lake, Sept. 26 - Oct. 7 with nine on 3rd, and one, Dec. 13 (RMC). One, Blagdon res., Sept. 27 and Oct. 12th.

GOLDEN PLOVER

NA Westerleigh Common: 300, Jan. 12; 20, Hawkesbury Common, Feb.; one, Chittening, Sept. 28; eight, Tormarton, Oct. 26, and 130, Nov.

SA Noted January - April 6 and Aug. 1 - December. All localities are listed, with figures and months for all counts over 50: Axe Estuary (60, Jan.; 90, Sept.; 220, Oct.; 250, Nov.; 130, Dec.), Sand Bay, Woodspring Bay, Clevedon coast, Portbury Wharf, Tickenham Moor (70, Dec.), Nailsea Moor, Kenn Moor (300, Jan.), Lulsgate, Priston (60, Mar.), Marksbury, Whitchurch, Blagdon reservoir and Chew Valley Lake (180, December).

TURNSTONE

NA Records only from Severn Beach to Chittening Warth. Up to 120 from January to April; 175, May 3 the rapid fall to one on 26th. One, July 19 rising to peak of 150, Aug. 25 - Sept. 6, then 60 - 100 to end of year.

SA Up to five noted on coast to May 25th and from Aug. 24th, with up to 30 at Clevedon in October. Five at Sand Point, June 18 (TB). One at Chew Valley Lake, April 27, up to three in May and again from July 22 to Aug. 31st. Two, Barrow Gurney reservoirs, latter date.

SNIPE

NA Reports of one or two at Chittening, New Passage and Littleton on Severn, January - April 5; and up to six at Hoar Gout, Avonmouth in January, November and December.

SA Probably bred, Weston Moor. Reported often up to April 17 and from July 2 at coast, reservoirs and elsewhere inland. Most were at Chew Valley Lake, with up to 100 in Jan. - March, 120 in Aug. and Sept., 200 in Oct., 340 in Nov. and 150, December. Other large counts in January - March were 100 or more at Weston in Gordano and Clevedon, and 50 - 60 at Axe Estuary, Sand Bay and on marshy ground at Ashton Vale; in September - December, 50 - 60 at Axe Estuary, Clevedon and Blagdon reservoir.

JACK SNIPE

NA Aust Warth: up to 12 to March 15, and up to six from Oct. 25th. Occasional single birds elsewhere on coast in same period.

SA Noted on the coast up to May 3 and from Sept. 7, mostly at Sand Bay, where up to seven were present, January - March, and then up to three. Up to three also at Chew Valley Lake, Oct. 5 - December, and one on Kenn Moor, Dec. 9th.

WOODCOCK

NA Two, Midger Wood, Hawkesbury, Jan. 1; single birds at Hallen, March 1, Nov. 16 and Dec. 16; Didmarton, Nov. 9 and Oakford on 30th.

SA Single birds at Leigh Woods, Jan. 2 and March 2; Brockley Combe on Feb. 23; and Sand Bay, Nov. 17th.

CURLEW

Up to 30, R. Avon and up to 130, Axe Estuary, Jan. - March and November - December. Otherwise main numbers were from Severn Beach to Chittening (NA) and at Sand Bay (SA), where monthly maxima were:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S.B.-Chitt.	78	85	66	24	8	55	150	300	120	120	80	400
Sand Bay	142	121	143	33	33	63	250	200	220	295	154	144

WHIMBREL

NA Eight, Oldbury on Severn, May 18th. Eight other records, April 26 - May 18 and four, July 13 - Sept. 28, all of one or two birds on the coast between Chittening and Littleton.

SA Twenty-three reports, April 20 - June 8, all from coastal areas; most were of 19 birds or fewer, but four flocks of 21 - 50 seen in May. Nineteen reports, July 6 - Sept. 28, of up to seven birds; also 36 at Chew Valley Lake, Aug. 5th.

BLACK-TAILED GODWIT

Small autumn passage, July - September, with up to three at Northwick Oaze (NA) and four at Chew Valley Lake but 17 in Sand Bay. One, New Passage (NA) in October, and c.40, Weston Bay area, Oct. to December, but 180 in Axe Estuary, Nov. 8 (RA).

BAR-TAILED GODWIT

NA Up to 150 , Chittening - Severn Beach, in April and 13 in May, but on autumn passage only three records of one or two birds.

SA Up to four on coast, January, February, April and May. Small autumn passage, with up to six at reservoirs and up to 12 on coast, August - October; also 31 over Chew Valley Lake, Sept. 6 (JB) and 30, Weston Bay, Oct. 20 (HRHL). A few records of up to nine from coast, November and December.

GREEN SANDPIPER

NA Single birds, Littleton on Severn, April 5 and Sept. 7; Lawrence Weston, July 27 and 29th; Hoar Gout, Avonmouth, July 7, 27th, and Dec. 6; and two there, Aug. 4th.

SA Six records, Feb. 8 - April 5 and twenty, June 21 - December, from coast and a few inland localities: up to four at Portbury Wharf in April, August and September, otherwise all were of single birds. Reservoirs: one, Chew Valley, March 14; 140 records there from June 21 to December, mostly of up to ten birds, but up to 23 from Aug. 1 to Sept. 13; up to six at Blagdon, July 9 - Sept. 19; two, Barrow Gurney, Aug. 1 and single birds on 12th and Sept. 16th.

WOOD SANDPIPER

SA Recorded only at reservoirs during autumn passage. Chew Valley: 55 records, July 31 - Oct. 29, mostly of one or two but with up to four, Aug. 5 - 11 and three, Sept. 17; one, Barrow Gurney, Aug. 1; seven records of one or two, Blagdon, Sept. 7 - 27th.

COMMON SANDPIPER

NA Fifty-one records, Jan. - Oct., mostly from Chittening area (where up to six in May and eight, July - September).

SA Some 140 records from reservoirs (mostly Chew Valley) and 15 from coast; mostly of up to four birds, but up to 13 at Chew Valley, April and May and up to 44, July to September, when also up to 12 at Barrow Gurney and Blagdon reservoirs. No records for December.

REDSHANK

Breeding confirmed only at coast near Clevedon and on Nailsea Moor (SA). Peak monthly counts are tabulated for main areas:

(1) Severn Beach to Chittening; (2) R. Avon (Sea Mills area); (3) Clevedon to R. Yeo; (4) Sand Bay; (5) Axe Estuary; (6) Chew Valley Lake.

	(1)	(2)	(3)	(4)	(5)	(6)
January	200	84	100+	108	250	0
February	200	70	15	45		0
March	200	13		40	45	2
April	50					
May	0	0		0		0
June	25	0				3
July	200	0		60		2
August	300	0		150		6
September	200	30		150		9
October	250		250	180	150	1
November	250			85	75	0
December	250				140	7
	NA			SA		

SPOTTED REDSHANK

SA Eight records of single birds on coast, February, April and July 29 - Oct. 19; many reservoir records, Aug. 5 - Oct. 18, mostly from Chew Valley Lake, where up to 15 (with up to ten at Blagdon) in late September and early October. One at Chew Valley Lake to year-end.

GREENSHANK

SA Small coastal passage, April 24 - June 18 (max. of nine at Sand Bay on former date). Recorded at coast and reservoirs, July 5 to Oct. 13; up to six at Sand Bay and Axe Estuary, and one or two elsewhere except at Chew Valley Lake, where up to 24 noted in August and 12 in September. One to S. over Abbots Leigh, Nov. 2 (TBS). A melanistic bird was present at Chew on Aug. 11, with brown and pinkish plumage, the normally white areas being light pinkish-buff (DEL).

KNOT

NA Chittening to Severn Beach: two to three present in February, April, October and November; up to 11, Aug. 18 - Sept. 3, and 400, Sept. 12-13 (the only sizeable flock for some years) but only 36 on 14th. One at Oldbury on Severn, Sept. 6th.

SA Very low numbers. On coast, up to 18 in Sand Bay, January to March 27 and Sept. 5 to year-end; 50, Clevedon - R. Yeo, Oct. 14; otherwise no more than six together. Up to six at Chew Valley Lake, Sept. 10 - Oct. 19, and one at Blagdon reservoir, Sept. 12th.

PURPLE SANDPIPER

NA One or two at Chittening and Severn Beach on dates between January and April 26, and Nov. 8 to year-end, with parties of six on March 23 and of three on April 6, both at Chittening.

LITTLE STINT

NA Single birds at Severn Beach on Sept. 28 and Oct. 5 (RGT).

SA One at Sand Bay, Feb. 27 (TB) and up to five, Sept. 2 - 23 (RA, JB, CJ). Three, Axe Estuary, Sept. 11 (RA). Reservoirs: one or two at Chew Valley, Aug. 18 - Sept. 16, then up to four to Oct. 10; one, Barrow Gurney, Aug. 31; four, Blagdon, Sept. 13 and five next day.

PECTORAL SANDPIPER

SA One was present at Chew Valley Lake from Sept. 26 (JBOR) to Oct. 21 (AHD, KEV *et al.*); it had an injured right tarsus. On Sept. 29 another, uninjured, was also present (DB, KEV). On Sept. 30, one having an injured right tarsus was present at Blagdon reservoir:

on the balance of probabilities this must be presumed to be the bird from Chew; though the latter was back in its accustomed place on Oct. 1, there is no record of its having been seen at Chew on Sept. 30th.

DUNLIN

Most numerous wader of area. Main counts summarised in table (for key to localities see Ringed Plover). Up to 400 feeding inland in January and February, Aust (NA), and Nailsea and Kenn Moors.

	(c)	(d)	(e)	(f)	(g)	(k)	(l)
January	5,000	1,500	1,500+	2,800	2,500		4
February	5,000	2,000	1,500+	2,400	2,000		2
March	4,000	500		1,200	3,000		
April	600	5		50			4
May	250			650			18
June	25						
July	50			300			11
August	120			400			28
September	150			6000			35
October	2,000			2,000		18	78
November	3,000			1,400	3,500		550
December	4,000			1,450	3,500		725

CURLEW SANDPIPER

NA Two, Oldbury on Severn, Sept. 6; two, Severn Beach, Sept. 6, and one on Sept. 28th.

SA Up to three on the coast, mostly at Sand Bay, July 27 - Aug. 11 and Sept. 2 - 21st. Reservoirs: one or two, Chew Valley, July 5 and Aug. 18 - 29; up to eight there, Sept. 6 - Oct. 19, but 29 on Sept. 12, falling to 12 by the 20th; one - two, Blagdon, Sept. 7 - 27th.

SANDERLING

NA Up to six, Severn Beach - Chittening, April 19 - May 26 and single birds, Aug. 23 and Sept. 6th.

SA Up to three in Axe Estuary and up to 11, Sand Bay, Jan., Feb., November and December. Passage records: up to seven on coast, May 4 - 17 and Aug. 23 - Sept. 21; single birds, Chew Valley Lake on May 11 and June 1st.

BUFF-BREASTED SANDPIPER

SA Two individuals of this North American vagrant were located at Chew Valley Lake on Sept. 1 by AM; one remained to Sept. 12 (many observers); one was also present from the 20th - 22nd (AM et al.) and another from Sept. 26 to Oct.1 (JBOR, DB, KEV). Records all accepted by British Birds Rarities Committee. Previous records for the area of Avon County were of one at Blagdon Reservoir, Sept. 15-

21, 1973 (Bristol Bird Report 1973, in _Proc. Bristol Naturalists' Soc._, 1974, p. 55) and of one at Chew Valley Lake on Oct. 3, 1973; this, like the other, was accepted by the Rarities Committee, but did not reach us for publication.

RUFF

_NA_ One at Severn Beach, Aug. 19 (PJC).

_SA_ Five coastal records of one or two birds, Aug. 12 - Oct. 7th. At Chew Valley Lake, two on Jan. 4 (SBE) and 90 reports from July 27 to December, mostly of five or fewer, but with a total of 38 on Aug. 26 then up to 15 to Sept. 30th. At Blagdon reservoir, one on Aug. 15 and up to four from Sept. 13 to Nov. 23rd.

AVOCET

_SA_ One at Chew Valley Lake, Feb. 23, seen at rest (DB) and later in flight (CGJ, RW). Two in flight, Sand Bay, Oct. 25 (RJP _et al._) and one there, Nov. 26 (TB).

WILSON'S PHALAROPE

_SA_ One was present at Chew Valley Lake on Sept. 17 (BR) and on the following day (DB, KEV _et al._). Record, accepted by _British Birds_ Rarities Committee, is second for area of Avon County (cf. Bristol Bird Report 1967 in _Proc. Bristol Naturalists' Society_, 1968, p. 379).

GREAT SKUA

_SA_ One off Steep Holm, flying W., July 11 (TBS); one off Brean Down moving up-channel into Avon waters, Sept. 16 (BR).

ARCTIC SKUA

_SA_ Two dark-phase birds flying up-channel off Sand Point, May 11 (RA); a pale-phase bird visited Chew Valley Lake on Oct. 7 (KEV). A number of records of birds off Brean Down (Som.) include birds either entering or leaving Avon waters: two, April 26 and 30th, and single birds on May 13 and 29th, and Aug. 20 (BR).

GREAT BLACK-BACKED GULL

_NA_ One, Avonmouth Sewage Works, March 26th. Five adults on R. Avon (Sea Walls to Bristol Docks), April 6 and three on July 5th.

_SA_ Up to twelve, Axe Estuary, March 4; one, Nailsea Moor, July 23; present all year at Portbury Wharf; seven juvs. there, Aug. 23rd. At Chew Valley Lake up to five were present, January to March and July to December, with ten present on Dec. 24th.

LESSER BLACK-BACKED GULL

City of Bristol: some 10 pairs, Temple Way area, May 1, and one nest seen from roof-top (NTL). Pair with young on factory roof-top, Cumberland Basin area. June 16 (TBS); three nests, City Centre, July 4 (RLB); a pair with three young on timberyard roof, Canon's Marsh, July 9 (TBS). Thirty-five on R. Avon, Bridge Valley Rd. to Conham Weir, Jan. 5 and two, Westerleigh Common, on 12th.

SA Pre-roost gathering of 655 birds at Chew Valley Lake, Sept. 30 (PJC); 30 adults, Portbury Wharf, Dec. 28th. These records understate the true status of the species.

HERRING GULL

City of Bristol: many birds seen around roof-tops, especially in Victoria St and Baldwin St area. Dead juvenile found (KEV). An unfledged bird calling from roof-top near City Centre, July 16 (RJP). Adult at nest, Cumberland Basin, May 9, and pair with young on house roof during June (TBS).

SA Three pairs attempted to nest at Church Hill, Clevedon; at least one pair reared young (JFB). A pair attempted to nest at Sand Point, as in 1974, but the single egg was predated (RA). Over 1,500 were roosting at Chew Valley Lake on Sept. 30 (PJC).

Birds wing-tagged as young on Steep Holm by Cardiff University were noted at Cheddar (Som.), Dec. 31 and Portbury, Oct. 4 - 5; a first-year bird seen at Chew on Dec. 14 had been wing-tagged at the Cardiff rubbish tip on Nov. 7 (per G.P.Mudge).

COMMON GULL

SA Few reports of winter flocks; the largest were 130 on Blagdon Hill on March 16, and 100 at Lulsgate on Nov. 15, while along the R. Avon only 23 were counted between the Sea Walls and Bristol Docks. These counts much understate the true status of the species; it is normally a common winter visitor to the Cotswolds and Mendip from large roosts at Frampton-on-Severn (Glos.) and Chew Valley Lake; some 10,000 were noted at the latter on December 3rd (KEV).

ICELAND GULL

SA One at Sand Point, May 30 (JB) - probably the same bird as one seen by BR at Brean Down (Som.), April 2 and May 8th.

LITTLE GULL

SA No coastal records. At Chew Valley Lake, one spring record: an adult on April 19th. Two, July 17, then frequently noted in August and September, mainly six birds or fewer, but a party of ten (seen in flight and on mud), Aug. 18 - 20, and two adults on 31st. Smaller numbers in October, with the last record on the 18th.

BLACK-HEADED GULL

NA Up to 600 on school playing field, Henbury in January.

SA Some 1,500 flying E. over Abbots Leigh in 40 minutes, March 20 (TBS). Counts at Sand Bay (TBS) and Chew Valley Lake (KEV) show the build-up of flocks from June - July:

Sand Bay	8 June	160	Chew Valley	2 July	100
	11 June	230		15 July	85
	13 June	300		26 July	2,500
	29 June	500		29 July	2,000
	13 July	600		1 Aug.	750
	3 Aug.	1,000		6 Aug.	750
	6 Aug.	1,100			
	26 Aug.	1,100			

KITTIWAKE

SA Some 250 moving up-channel of Brean Down into Avon waters, April 11 (BR); dead adult on beach, Sand Bay, on 13th. One, Birnbeck Island, May 24 (BLK). Movements up channel off Sand Point (RA, TB):

Date:	May 6	11	27	June 3	17	July 7	22
Birds:	3	2	9	21	28	14	37

A single immature bird, Chew Valley Lake, Sept. 3-6 (RMC, AHD, KEV).

BLACK TERN

SA Few in spring: one, Portbury Wharf, May 10-11; three at Barrow Gurney resrs. on 17th; and two at Chew Valley Lake and one, Sand Bay, on 18th. Marked autumn passage, Chew Valley Lake: up to ten birds on many dates from Aug. 3, but 28 on 18th, 17 on 20th-21st, the largest count - 66 - on Sept. 9 then 30 - 40 from the 10th -17th and the last record, Oct. 10. Single birds, Barrow Gurney resrs, on Aug. 2, 6th and 20th; three, Blagdon, Aug. 15 and Oct. 5.

WHITE-WINGED BLACK TERN

SA Chew Valley Lake: two, June 14 (ARA) and an adult in summer plumage, Aug. 8 - 12 (AM, DB, PJC, RMC *et al.*); records, accepted by *Brit. Birds* Rarities Committee, are 8th, 9th and 10th for Avon.

COMMON TERN and ARCTIC TERN

A marked passage in May was mainly apparent on the coast. Unlike that in 1974 it produced no records from North Avon.

SA At Sand Point, 183 passed in $\frac{1}{2}$ hr on May 11, and 429 in $1\frac{1}{2}$ hr on 18th; also 200 on 28th (RA, TB). Seven, Sand Bay, June 11. At

Chew Valley Lake, six on April 19 and May 8; 20+ on May 18, one on June 19 and four on the 28th.

The autumn passage at Chew, from Aug. 2 to Oct. 7, involved mainly small numbers (1 - 8), but 17 were seen on Aug. 13th.[Arctic Terns were specifically identified on July 16 (one), Aug. 23 (one), Sept. 13 (two) and 17th (two), and up to three, Oct. 4 - 7th.]Single birds were noted at Blagdon res. on Aug. 16 - 17. At Sand Point, 21 on Aug. 21 and a few on Oct. 1st. Two, Clevedon Pill, Sept. 14th. Two Arctic Terns, Bristol City Docks, Aug. 22 (TBS).

LITTLE TERN

SA Chew Valley Lake: adult, Sept. 12 (KEV); up to three, Oct. 4 - 7th (DB, AHD, JCL, TBS, KEV).

SANDWICH TERN

SA Single bird, Birnbeck I., Aug. 29 (BLK) and four, Sand Point, Sept. 16th. Single birds at Chew Valley Lake, April 20 (DB); 3 - 4 on Aug. 5 - 7th (DB); two, Sept. 17 (BR) and on 27th (KAT, DB).

RAZORBILL

SA A single bird, probably this species, Sand Point, May 18 and 25th (RA). Between Sand Point and Brean Down: two, April 16; one dead, May 11; one, June 9; four, Oct. 12th.

GUILLEMOT

SA One oiled bird, R. Axe, Jan. 4 (RA), and a headless corpse, probably this species, Weston Beach, same day (RA). One heading up channel, Sand Point, May 11 and a headless corpse, probably this species, Sand Bay, same day.

LITTLE AUK

SA One at Blagdon reservoir, Feb. 1 (DE, DC). The 'Weston Mercury' reported an injured bird at Brean, just S. of Avon boundary, Jan. 28.

STOCK DOVE

Breeding records from both NA and SA. Flock of 100, Aust Warth (NA) in November and December.

WOODPIGEON

Common and widely distributed. Flocks reported: Chittening (NA) - up to 400, November and December; c. 280, Kelston/Saltford area, Oct. 28 and c.300 flying S., Stockwood, same day (SA).

TURTLE DOVE

Noted, April 28 - Aug. 17 from 7 areas in NA and eleven in SA.

CUCKOO

Birds calling, April 16 to June 13th; two reports of young in nests: Spotted Flycatcher's, Sheperdine, NA, June 13 (JDRV) and Reed Warbler's, Chew Valley Lake, SA - egg laid between June 12 aand 15 (DW, who reports this was only one of 48 Reed Warbler nests found in the area which was parasitized.)

BARN OWL

NA More reports than for some years, but all near N. of Bristol and of single birds: Patchway - Winterbourne area, Jan. 2; dead bird on M4, Hambrook on 26th; Cribbs Causeway, Feb. 8; Stapleton, near M32 on 13th; Chittening, August and September (and one dead,Sep. 13).

SA More widespread reports than in recent years. Breeding season or breeding records from Woodspring, Kewstoke, Chew Valley Lake, Box Hill, Bath; R. Chew nr. Keynsham, Hunstrete and Portbury Wharf. Autumn and winter records from these and other areas.

LITTLE OWL

Records from 60 one-km squares (12 in NA). Breeding proved in only five areas. No records for 10-km squares ST67 or ST78.

TAWNY OWL

Records from 50 one-km squares (21 in NA); breeding proved at Portbury Wharf, Radstock, Stanton Prior, Bath area and Knowle.

LONG-EARED OWL

NA One near Lawrence Weston, Dec. 22 (RLB) - forerunner of others in January 1976, part of a marked influx from the Continent.

SHORT-EARED OWL

NA Single birds noted, Severn Beach - Chittening, January, April 5th (two) - May 7, and several dates, July to late September; two, Oct. 26 and three on 29th. Singles also at Aust in February and Oct.

SA Single birds, Yeo Estuary, Oct. 19; Sand Bay on 21st and near Kingston Seymour, Dec. 2nd.

NIGHTJAR

NA One hawking insects, Sneyd Park, Bristol, June 6 (HRHL).

SA One, Old Down, Shipham, June 11 (HGH).

SWIFT

NA One examined at nest, Ashley Down, Bristol, July 23 had been ringed there as adult, July 1964; another ringed there in July 1966 was foul-hooked by fisherman, Blagdon res., July 23 (later released).

SA First noted, April 18, Chew Valley Lake; 3,000+ there, July 22.

KINGFISHER

Many breeding and breeding season records from NA and SA areas. In Bristol, bred in Frome Valley; one, Bristol Bridge, Oct. 8, and one hit window, Hartcliffe, Oct. 14th. Many other winter records included one at Royal Victoria Park, Bath.

HOOPOE

SA One in observer's garden, Chew Stoke, July 22 (AL).

GREAT SPOTTED WOODPECKER

Widespread reports from 69 localities (30 in NA, including a pair breeding on Clifton Down, Bristol).

LESSER SPOTTED WOODPECKER

NA Reported from 14 localities including, in Bristol, Frome Valley and Clifton and Stoke Bishop areas.

SA Noted in 14 localities including, in Bristol, Brislington, Ashton Court and Whitchurch.

WOODLARK

SA Two flying E. at Middle Hope, Jan. 17 (TB).

SAND MARTIN

SA Usual records of breeding in wall drains at Keynsham (8 pairs) and Parson Street Station (4 pairs).

RAVEN

NA One heard calling, Inglestone Common, Wickwar, May 4th.

SA Reports of one or two birds from Portbury Wharf, Middle Hope, Nailsea, Cleeve Wood and Compton Dando.

WILLOW TIT

SA Single birds reported from Abbots Leigh and Barrow Gurney and Chew Valley reservoirs (J&LC, TBS, KEV).

DIPPER

Reports of one or two birds from R. Frome, Bristol (NA) and from Rickford, Combe Hay, Midford and Shockerwick (SA).

BEARDED TIT

SA Up to four heard, Chew Valley Lake, February, April, October and December (DB, BR *et al.*). Two to E., Sand Point, Oct. 26 (RA).

RING OUZEL

SA One, Clevedon, Apr. 29 (HRHL); one, Sand Point, Oct. 25 (RA).

WHEATEAR

Widespread reports, NA and SA, of up to thirteen on passage, March 13 - June 5 and up to eight, Aug. 5 to Oct. 12th.

STONECHAT

NA Forty reports, covering all months, from many areas including in Bristol at Avonmouth, Shirehampton, Lawrence Weston, Purdown, Upper Eastville and St Philip's Marsh (bred at latter).

SA Reports (84), all months, from many areas including, in Bristol, Brislington, Whitchurch old airport (bred) and Stockwood.

WHINCHAT

Reports (37), April 29 - Oct. 11 from 16 localities. Breeding proved at Nailsea Moor (SA); family party seen, Chittening (NA).

REDSTART

No breeding records, but 13 reports of up to five, April 20 - Oct. 27 from Thornbury area, Hallen and Upper Eastville, Bristol (NA) and from Temple Park and Whitchurch old airport, Bristol; Bower Ashton, Sand Point, Worle and Chew Valley Lake (SA).

BLACK REDSTART

Reported, January - April 12 and Oct. 21 - Dec. 9 from Hallen and Avonmouth, Bristol (NA); and Widcombe (Bath), Hengrove and Stockwood (Bristol), Dundry, Nailsea, Congresbury and Weston-s-Mare.

NIGHTINGALE

Reports of up to five singing males from Duckhole (Thornbury), Littleton on Severn, Inglestone Common, Horton and Oakford (NA); and Leigh Woods, Abbots Leigh and Hinton Charterhouse, (SA), April 28 - June 22nd. One ringed, Chew Valley Lake, July 25th.

CETTI'S WARBLER

SA One, Chew Valley Lake, Feb. 25 - April 20 (trapped and ringed). Record, accepted by *Brit. Birds* Rarities Committee, is first for Avon.

GRASSHOPPER WARBLER

Singing males reported, April 25 - Aug. 7, from Lower Morton, Aust, Chittening Warth, Hallen, Filton and Doynton (NA): and Nailsea Moor, Clevedon, Dolebury Warren, Bleadon and Chew Valley Lake (SA).

WOOD WARBLER

Singing males reported, April 19 - July 13, from Inglestone Common, New Passage and Hallen (NA); and Ashton Court, Leigh Woods (breeding proved), Abbots Leigh, Portbury, Nailsea, Wrington, Chew Valley Lake, Weston Woods, Uphill, Cleeve and Rainbow Wood, Bath.

WHITETHROAT

Apparently making a very good recovery from the 1968-9 'crash'. 115 reports from 61 widespread localities (26 in NA), April 22 to Sept. 12. Seventeen birds noted on passage at Hallen, May 9; at least 40 noted at Sand Point, Sept. 7.

FIRECREST

Single birds reported from Redland, Bristol (NA), Abbots Leigh, Failand, Portbury Wharf and Congresbury (SA), Jan. 21 - May 4th. Two ringed at Chew Valley Lake, Jan. 3 and one retrapped there, Nov.8th.

PIED FLYCATCHER

NA A male reported from Henbury (Bristol), April 20 (PDB).

TREE PIPIT

Up to five reported, April 18 - Sept. 16, from Chittening and Filton (NA); and St George's Wharf, Cadbury Camp, Wrington and Dolebury Warrens, Sand Bay, Axe Estuary and Cleeve Hill (SA).

ROCK PIPIT

NA Coastal records from Aust Warth and Littleton on Severn.

SA Coastal records from Clevedon and Sand Point, and inland from Chew Valley Lake and Sea Mills, Bristol (where five, Jan. 30th).

WATER PIPIT

SA Up to three reported from Chew Valley Lake, January 1 - March 1 and October 8 - December 22nd.

PIED WAGTAIL

SA Roosts of up to 100 noted at Chew Valley Lake, Jan. 21 and Sept. 12, and Bath University, Dec. 7th.

WHITE WAGTAIL

Up to four birds noted, April 8 - 27 and Sept. 9 - Oct. 5, from Eastville Park, Bristol (NA), Sand Bay and Chew Valley Lake.

YELLOW WAGTAIL

Seventy-five reports of up to 25 birds, April 6 - Oct. 7, from: in NA, Aust, Severn Beach, Chittening, Hallen, Avonmouth* and Filton; and in SA, Brislington (Bristol), St George's Wharf, Cadbury Camp, Nailsea Moor*, Sand Bay, Blagdon reservoir and Chew Valley Lake*. There were the usual reports of blue-headed forms from the latter place. * Proof of breeding received.

GREAT GREY SHRIKE

SA One at Stockwood, Bristol, on March 26 (JHo, SP).

RED-BACKED SHRIKE

SA A pair is reported to have bred successfully (SB) at an undisclosed locality. An immature bird was seen at Churchill on Oct. 11.

HAWFINCH

Reports of up to nine birds from Clifton and Durdham Downs in Bristol and from Hallen (NA); and Leigh Woods, Ashton Park, Abbots Leigh, Cadbury Camp, North Widcombe, and Prior Park and Rainbow Wood in Bath (SA).

SISKIN

Widespread reports (59) of up to fifty birds, from NA and SA, Jan. 4 to April 13 and Oct. 8 to end of year. A flock of 300 noted, New Passage, Oct. 20 (NTL).

TWITE

NA Eight, in flight and calling, at Chittening on Oct. 25 (RGT).

REDPOLL

Up to thirty birds reported in all months and from many places in both NA and SA.

BRAMBLING

Noted between Jan. 3 and April 16, and between Oct. 11 and Dec. 31; flocks of up to 300 at Aust Warth, Severn Beach and Chittening (NA) and many of up to 40 in SA localities, also 130 at Portbury Wharf on Dec. 28.

CORN BUNTING

Up to ten birds noted at Marshfield and Pucklechurch (NA) and Dundry Hill and Lansdown, Bath (SA), April 13 - July 28.

CIRL BUNTING

NA Four near Severn Beach, Sept. 14 (DJC).

SA Pairs at Worlebury, March 16; Bleadon Hill on 8th and one near Woodford Hill on 27th (TRC, SBE).

SNOW BUNTING

SA Two, Clevedon, Oct. 28; three, Sand Bay, Nov. 12; and one at Kingston Seymour, Dec. 16 (TB, HRHL, FCV).

OTHER COMMON OR REGULARLY-OCCURRING SPECIES PRESENT

Those marked * are mentioned in the Foreword.

Residents: Pheasant, Skylark, Crow, Rook*, Jackdaw, Magpie, Jay; Great, Blue*, Coal, Marsh and Long-tailed* Tits; Nuthatch, Treecreeper, Wren*, Mistle and Song Thrushes, Blackbird, Robin, Goldcrest*, Dunnock, Meadow Pipit, Grey Wagtail*, Starling, Greenfinch, Goldfinch, Linnet, Bullfinch, Chaffinch, Yellowhammer, Reed Bunting, House Sparrow and Tree Sparrow.

Summer and Winter Visitors: Swallow*, House Martin*, Fieldfare*, Redwing*, Reed Warbler*, Sedge Warbler*, Blackcap*, Garden Warbler*, Lesser Whitethroat, Willow Warbler and Chiffchaff*.

The abbreviations NA and SA refer respectively to North Avon (formerly South Gloucestershire) and South Avon (formerly North Somerset).

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We are grateful to the Bristol Ornithological Club for the use of its monthly records. If any contributors to these have been omitted from the list above, we tender our apologies. As in former years, records for South Avon have been exchanged with the Somerset Ornithological Society, which continues to include this area in its report, where it forms District 1.

LEPIDOPTERA NOTES
BRISTOL DISTRICT, 1975

BUTTERFLIES

By A.N. GROSE

It has not been possible to make a detailed report for this year as the notes had to be written before the individual records were due. These will be filed as usual.

On the whole, 1975 was a good Butterfly year, the warm dry sunny weather favouring many species. This improvement may be more apparent in 1976. However, the Small Tortoiseshell, Peacock and Painted Lady appear to have been adversely affected. In the case of the Small Tortoiseshell only very small numbers were seen, although there was an improvement in the autumn.

It was noticeable that there was a big increase in the number of dwarf forms seen, particularly in the White Admiral, Comma and Speckled Wood. This may have been possibly due to dry conditions. No rarities have been reported to date but the Wood White was seen on 25th June in Dymock Wood, where it has not been reported for several years.

MOTHS

By K.H. POOLE

The following list has been compiled from records received from R. Angles (RA), C.S.H. Blathwayt (CSHB), J.F. Burton (JFB) and R.W. Rowe (RWR). All were single specimens unless otherwise shown. Species marked * were noted at light.

Deilephila elpenor L. (Elephant Hawk), Congresbury, September 7. Larva (RWR).

Macroglossum stellatarum L. (Humming-bird Hawk), Uphill, Weston-super-Mare, August 25, Brean Down, September 9 (RA).

Gastropacha quercifolia L. (Lappet), Shapwick Heath, July 4* (CSHB).

Panaxia dominula L. (Scarlet Tiger), Frampton Mansell, Stroud, July 20 (JFB).

Eilema lurideola Zk. (Common Footman), Congresbury, July 29, 31 (RWR).

Cryphia perla Schiff. (Marbled Beauty), Congresbury, July 29 (RWR).

Hadena suasa Schiff. (Dog's Tooth), Weston-super-Mare, August 5* (CSHB).

Eremobia ochroleuca Esq. (Dusky Sallow), Shapwick Heath, July 18, pair at rest (CSHB).

Procus latrunculus Schiff. (Tawny Minor), Congresbury, July 30 (RWR).

Amphipyra pyramidae L. (Copper Underwing), Congresbury, July 14 (RWR).

Scoliopteryx libatrix L. (Herald), Congresbury, July 8 (RWR).

Scopula immutata L. (Lesser Cream Wave), Long Wood, Cheddar, June 5, many (JFB).

Xanthorhoë designata Hufn. (Flame Carpet), Long Wood, Cheddar, June 5 (JFB).

Epirrhoë galiata Schiff. (Galium Carpet), Long Wood, Cheddar, several June 5 (JFB).

Perizoma affinitata Steph. (The Rivulet), Long Wood, Cheddar, several June 5 (JFB).

Perizoma bifaciata Haw. (Barred Rivulet), Weston-super-Mare, July 28* (CSHB)

Eupithecia subnotata Hubn. (Plain Pug), Weston-super-Mare, July 14* (CSHB).

Eupithecia arceuthata Frey. (Freyer's Pug), Weston-super-Mare, June*, several (CSHB), Milton, Weston-super-Mare, June 10* (KHP)

Epione repandaria Hufn. (Bordered Beauty), Congresbury, July 31 (RWR).

Pseudopanthera macularia L. (Speckled Yellow), Goblin Combe, June 1 (RWR).

Bupalus piniaria L. (Bordered White), Goblin Combe, June 1 (RWR).

Ectropis consonaria Hb. (Square Spot), Weston-super-Mare, late May*, a few (CSHB).

Ematurga atomaria L. (Common Heath), Weston Moor, Gordano Valley, May 13 (JFB), Congresbury, July 27 (RWR).

Procris statices L. (The Forester), Clevedon, July 6 (12), 11 (2) (JFB).

Hypsopygia costalis Fab. (Gold Fringe), Congresbury, July 14 (RWR).

Further additions to the list for the Congresbury area (RWR) are *Euproctis similis* Feussly.(Gold-tail), *Agrotis puta* Hb. (Shuttle-shaped Dart), *Diarsia rubi* Vieweg. (Small Square Spot), *Melanchria persicariae* L. (Dot), *Diataraxia oleracea* L. (Bright-line Brown-eye), *Apamea secalis* L. (Common Rustic), *Procus strigilis* Cl. (Marbled Minor), *Operophtera brumata* L. (Winter Moth), *Abraxas grossulariata* L. (Magpie), *Sylepta ruralis* Scop. (Mother of Pearl).

Editorial Note

The hot dry weather of 1976 has had many effects on the local flora and fauna; some of them are immediately obvious, others may not become apparent for a long time. I hope that we shall be able to document these changes as fully as possible in the next volume of the Proceedings, and urge all members to send their observations to the Secretaries or Recorders of the appropriate Sections. I shall be very glad to receive any observations on other groups of animals not covered by the Sections, at the address given inside the front cover.

R.A.A.

POLYTRICHUM SPP. IN AN APPLE ORCHARD ON HERBICIDE-TREATED SOIL

By T.E.T. BOND

University of Bristol, c/o Long Ashton Research Station

Summary:- *Polytrichum juniperinum, P. aurantiacum* and *P. commune* are reported from an apple orchard at Long Ashton Research Station (v.c. 6), growing with other mosses on weed-free herbicide-treated soil.

In February 1973 *Polytrichum commune**, normally so characteristic of damp moorland and other highly acid uncultivated soils, was noted among other mosses growing on weed-free herbicide-treated soil in an experimental apple orchard at Long Ashton. This unexpected occurrence was confirmed from the same general area a year later; and in Feb.-Mar. 1975 a more detailed examination of the site was made in the course of which two other *Polytrichum* spp. were also found. The results of this examination are now presented.

The orchard (grid ref. ST. 534695) is at an altitude of about 47m on a reddish-brown deep loam derived from the Keuper Marl. Before planting in 1952 the site had been under continuous arable cultivation for at least 30 years. The trees, three apple varieties, are planted at 6.1m (20ft) square and are of semi-dwarf 'bush' form with a free trunk of about 0.8m. The experimental area is a rectangular block of 25 rows of 17 trees, covering about 1½ hectares. The object of the experiment has been to compare different cover crop (sward) and manurial (NPK factorial) treatments and, since 1967, to compare sward cover with a weed-free environment maintained by the application of herbicides (paraquat and simazine). In addition to the experimental application of fertilizers, an overall spring dressing of

*Nomenclature is in accordance with Warburg (1963).

Nitro-chalk has been given yearly; and the whole orchard receives a routine commercial spray programme for pest and disease control. Herbicides are applied to a strip 1.8m (2yd) wide along the rows in the sward-covered areas, to facilitate mowing.

The layout of the experiment (Bould & Jarrett, 1962) comprises 64 plots of two trees, each plot being surrounded on all sides by guard trees. Moss colonisation and the occurrence of *Polytrichum* spp. was recorded for each plot, taking either the weed-free strip along the rows or, in the plots receiving herbicide overall, the traffic-free area of ground corresponding to the total width (c. 3.4m) of the trees.

Polytrichum occurred in 17/32 'weed-free' and in 9/32 'sward' plots - frequency values which are proportional to the area of bare soil available for colonisation in the two situations. Of the total of 26 plots in which the moss occurred, 15 were noted as having 'large patches' about 0.2-1.1m diameter; with up to five such patches per plot. Otherwise, growth was in the form of smaller tufts or, in a very few instances, of scattered shoots suggesting a larger colony in process of disintegration. In all, 58 discrete colonies were recorded, comprising three *Polytrichum* spp. - 30 colonies of *P. juniperinum*, 12 each of *P. aurantiacum* (*P. gracile*) and *P. commune*, and four colonies of an admixture of two species together. All determinations were confirmed by microscopic examination following Dixon & Jameson (1904). The majority of *P. juniperinum* colonies bore male inflorescences, with antheridia; a single colony of *P. aurantiacum* bore nearly mature capsules. *P. commune* showed the most luxuriant growth of the three species, corresponding to the 'short dense sward' as defined by Sarafis (1971). There were no clear-cut manurial effects on the frequency of *Polytrichum* species, either collectively or severally; but there was some slight indication that the moss occurred more frequently on plots receiving added nitrogen (in the form of Nitro-chalk). The possible effect of variations in soil acidity was examined by taking pH values (glass electrode) of samples of surface soil (0-20mm) from eight pairs of plots, one plot of each pair with 'large patches' of *Polytrichum* and one without *Polytrichum* but both receiving the same manurial treatment. The values ranged from pH 5.6 to 7.0 (av. 6.2) and from pH 6.4 to 7.5 (av. 7.1) respectively. For one such pair of plots chosen at random, the soil was also sampled at depths of 20-40mm and 40-80mm and here the respective pH values for the plots with and without *Polytrichum* were 5.9 and 7.4 (0-20mm), 5.9 and 7.3 (20-40mm), 6.5 and 7.8 (40-80mm), clearly demonstrating the expected surface leaching effect due to the absence of phanerogamic vegetation. Experience elsewhere (Greenham, 1975) has suggested that this effect may be accentuated by a high rate of N-application.

No systematic record of the occurrence of other mosses was attempted; *Atrichum undulatum* occurred frequently and, at a glance, could be mistaken for *Polytrichum; Ceratodon purpureus* was locally abundant and highly conspicuous. Generally at Long Ashton, *Bryum argenteum* becomes dominant on simazine-treated land, as already noted by Stott (1968). *Polytrichum juniperinum* and *P. commune* are of wide-spread occurrence in N. Somerset (v.c. 6) in suitable habitats and are listed by Appleyard (1970) from the same 10-km square (56) as that of the present record and from all (*P. juniperinum*) or several (*P. commune*) of the adjoining ones; whereas *P. aurantiacum* is a relatively rare species, listed only from two 10-km squares in the south of the county.

Clearly, there is much scope for further study of bryophyte ecology and succession as affected by the use of herbicides, whereby competition from higher plants may be eliminated without soil disturbance.

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POST INFERIOR OOLITE MINERALIZATION AT WHATLEY QUARRY, E.MENDIP

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Summary:- This paper gives an account of the lead-zinc-barium mineralization that occurs in the Upper Inferior Oolite at Whatley Quarry, E.Mendip. A brief account of the mineralogy and general appearance of the mineralization is given. Reference is made to the secondary silicification of the Inferior Oolite at the locality, and in the Oakhill-Harptree area of Central Mendip. Two contrasting mechanisms are proposed for the silicification. Their bearing on the age and processes of the metalliferous mineralization is discussed. An Upper Jurassic age is tentatively proposed for the Pb-Zn-Ba mineralization.

INTRODUCTION

Whatley Quarry, situated on the north flank of the Beacon Hill pericline, is opened in Carboniferous Limestone which, for the most part, corresponds to the Black Rock and Clifton Down Limestones of the Avon Gorge. In the eastern part of the quarry, Inferior Oolite, here represented by the Doulting Stone, rests unconformably on the Carboniferous Limestone. A thin (25 cm) basal conglomerate is developed. The Doulting Stone attains a maximum thickness of 3m in the quarry area. Locally the basal conglomerate and also certain horizons in the Oolite have been silicified. This silicification most commonly occurs in the form of lensiform bodies up to several meters long as exposed, and disposed roughly parallel to the bedding. The siliceous rock has a bluish grey coloration. It grades off rapidly into unaltered country rock. A series of thin sections across a typical lens shows the coloration to be mainly due to disseminated pyrite. This has preferentially replaced ooliths and bioclastic debris. The silica is mainly developed in the matrix. A close correlation between depth of coloration, degree of oxidation of the pyrite and silica content is found in these lenses. No pyrite is present in the unaltered Doulting Stone.

However, the occurrence of small patches of iron oxide which rim and/or replace the skeletal debris in some of the unsilicified rock may be evidence of the former presence of pyrite in this material. Similar lensiform bodies containing variable amounts of galena, baryte and sphalerite, as well as pyrite, are also found but are not common.

During the course of quarrying operations, a number of thin calcite veins, some containing baryte, galena and occasionally sphalerite, have been seen to cross the unconformity and continue upward into the Inferior Ooolite. Although the presence of mineralization in the Oolite of this district has been known for over 100 years (Moore, 1867), no account of the detail of these occurrences has so far been published. This note gives a brief description of one such vein recently exposed during overburden removal.

OBSERVATIONS ON MINERALIZATION

Fig. 1 shows the spatial distribution of the vein within the Inferior Oolite. On entering the Oolite, the vein splits into several small veinlets. The strike of the principal veinlet (150^{o}) differs little from that of the vein in the underlying Carboniferous Limestone. There is no evidence of lateral spread of the mineralizing solutions along the Carboniferous Limestone-Inferior Oolite interface. A thin layer (1-2 cm) of brown clay is developed at the unconformity in the region of the vein. Where this clay band is absent there is good adhesion between the basal conglomerate and the Carboniferous Limestone. Parallel striations, reminiscent of slickensiding, were seen on the underside of some of the ripped blocks of basal conglomerate. No evidence of mineralization was found on these striated surfaces.

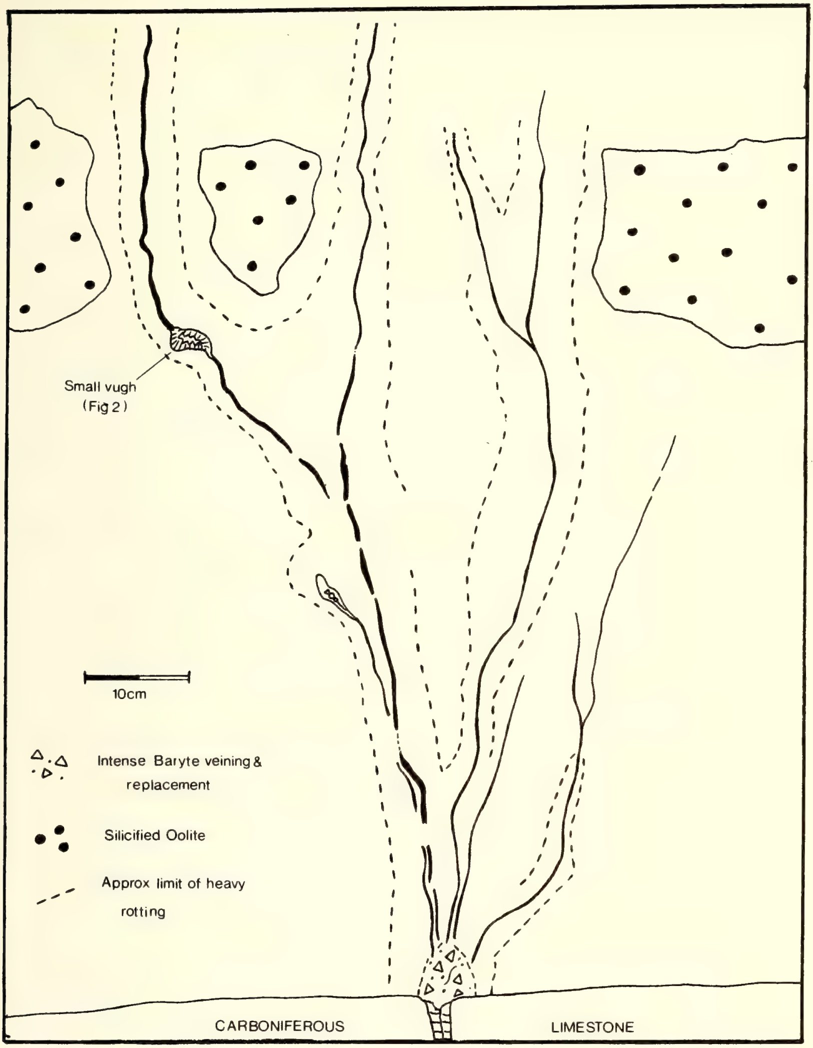
Small vugh
(Fig 2)
10cm
Intense Baryte veining & replacement
Silicified Oolite
Approx limit of heavy rotting
CARBONIFEROUS
LIMESTONE

Fig. 1. Galena-calamine-baryte bearing veinlets within the Inferior Oolite. The oolite is approximately 1.5m thick at this point.

Within the Inferior Oolite, calcite, baryte, gelena and sometimes calamine and/or sphalerite are the main vein minerals. Sphalerite is not present in the vein under discussion here. The vein is mostly symmetrical with a thin discontinuous string of baryte and galena sandwiched between calcite but this is not always so. Calamine ($ZnCO_3$), when present, is most easily recognised in the symmetrical parts of the vein, where it occurs as earthy to vitreous, warty or cellular brown or pinkish encrustations on the other minerals. The lack of sphalerite and the corroded state of the galena crystals where calamine is developed suggest that the calamine has been derived by alteration of primary ZnS within the vein. Although calamine has not been described as a primary hydrothermal vein mineral, it appears that it would be stable under these conditions (Dana, 1951). No calamine has been identified in the vein below the unconformity. There, massive sphalerite is locally abundant. This weighs against a primary origin of calamine in the veinlets in the Inferior Oolite above.

The mineral veins follow the course of fractures in the Oolite, but wall-rock replacement has invariably occurred. The individual veinlets pinch and swell but nowhere exceed 3 cm in width. It is unusual for veins anywhere in the Oolite at Whatley Quarry to be much wider than this. Fracture zones, recemented by baryte,locally reach a width of 10 cm or more. These brecciated regions are usually of only very limited extent. Small concentrations of baryte, galena and calcite as geodal bodies are sometimes found (Fig. 2). Locally the vein loses its identity and is represented only by a narrow region of baryte-impregnated Oolite. Lateral migration of the ore-fluids along joints and fractures and through the body of the rock has led to the development of crystals of baryte in the

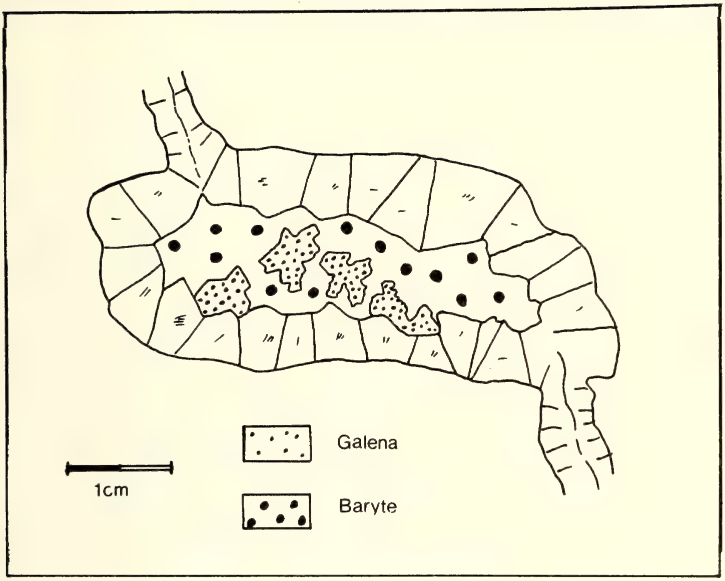
Galena
Baryte
1cm

Fig. 2. Small vugh developed in the principal veinlet shown in Fig. 1.

internal cavities of fossils. Small scale baryte replacement of the Oolite can occur in the neighbourhood of clusters of brachiopods. Small solution cavities, developed at some distance from the mineral veins, and having no apparent spatial relationship to them, are often found to have a calcite-baryte lining up to 1 cm thick. A little galena may occasionally be disseminated throughout the Oolite in the immediate vicinity of such a cavity.

Larger mineralized solution cavities are sometimes encountered in the Oolite at Whatley. These may reach several meters in length. In addition to a calcite lining, they may contain variable amounts of baryte, calamine, galena and/or clay. One such cavity, lying close to the Carboniferous Limestone/Inferior Oolite contact, was recently exposed during removal of overburden. This cavity is completely lined with calcite, some of which appears to have grown originally as aragonite. Flowstone calcite, sometimes containing thin layers of black crypto-crystalline silica, is also found. Small amounts of stratified, calcareous sediments are developed in some parts of the cavity. Very little galena or baryte occurs in the calcite, and any present is usually restricted to the calcite lining/wall-rock contact. Small scale replacement of the cavity walls by calamine is common. The metal-rich solutions appear to have been locally ponded, resulting in the formation of small pockets of hard brown slaggy impure calamine in the wall rock. Occasionally the stratified calcareous sediments have been impregnated and/or replaced as well. In this cavity the greatest concentrations of galena are always found associated with these replacement deposits. The individual crystals are heavily corroded and encrusted with calcite and warty calamine. Small amounts of baryte are associated with this material. No sphalerite has been found.

Prior to the exposure of the present cavity, slaggy calamine with associated galena, closely resembling that found here, was recorded from the overburden tip (by members of Bath Geological Society). This probably came from a similar solution cavity. Partially replaced stratified sediments are present in some of these specimens also. Well formed uncorroded galena crystals were only found where this material was not heavily encrusted by calamine.

The occurrence of free silica in some of the flowstone suggests that on entering the present cavity, the metal-rich solutions became charged with silica. This would have occurred if the mineralizing solutions became mixed with the local groundwater. It is thus possible that small amounts of hemimorphite ($Zn_4Si_2O_4(OH)_2.H_2O$) may have formed in addition to the calamine replacement deposits. An XRD study of the purified insoluble residue from acid digestion of 50 g of this material failed to reveal any hemimorphite. The lack of quartz in any of the mineral veins in the Inferior Oolite shows that the primary ore-fluids were essentially silica-free.

THE PROCESS OF MINERALIZATION

The projected course of a small cave in the Carboniferous Limestone (now removed during quarrying operations) passes very close to the large cavity. The inner recesses of the cavity appear to extend below the unconformity and probably there was a connection to the cave. The presence of flowstone and the calamine-replaced sediments within the cavity show that a flow regime involving both the local groundwater and the mineralizing solutions had been established at the time of mineralization. The process of ore genesis visualized is one whereby "hydrothermal" solutions enter the Oolite via fractures in the rocks below and mix with the local groundwater to varying extents. If the cavity and cave were connected at the time of mineralization it is possible that layered epigenetic lead-zinc-barium deposits may have been formed at suitable sites in the cave system. A similar process of cave-mineralization, albeit on a far larger scale, has been invoked to account for the stratified galena-baryte deposits at the Golconda Mine in Derbyshire (Ford & King, 1965). Small cavities and brachiopod clusters in the Oolite adjacent to the Whatley cavity are filled with baryte and calcite as described above. The clay deposits seen in some of the calcite lined cavities may well be of more recent origin.

The Oolite bordering the vein in Fig. 1 is heavily rotted throughout most of the exposure. Secondary iron staining has occurred in this rotted Oolite. Small amounts of manganese oxide sometimes occur and always at the vein/wall rock contact. This probably relates to the greater degree of atmospheric oxidation which would be expected to occur at that interface. (Rotting, and thus iron staining, is greatest near the unconformity close to the point of origin of the veinlets. Baryte replacement of the Oolite is widespread in this region.)

SILICIFICATION

Silica metasomatism, some of which post-dates the main phase of lead zinc mineralization, has occurred in patches distributed throughout the Inferior Oolite at Whatley. This silicification has locally converted the Oolite to massive black or brown structureless chert. Small cavities containing well formed quartz crystals are common in this material. Elsewhere, small baryte-lined solution cavities have become silicified. The baryte tends to become impregnated with silica and finally is replaced. In the initial stages the characteristic fibrous radiating habit of this mineral survives in the silica, but ultimately it is obliterated. Small amounts of pyrite and to a lesser extent baryte are invariably found associated with the heavily silicified cherty Oolite. Galena and sphalerite may also occur.

The source of the silica is not immediately obvious but the metasomatism responsible for the formation of the massive chert may in part be contemporaneous with that which has affected the Lower Lias and Inferior Oolite of the Oakhill-Harptree area in the Central Mendip. The Harptree Beds consist of massive, bedded, buff-coloured cherts with yellow clayey partings. Baryte is commonly associated with the Harptree Beds and traces of sphalerite and galena have also been recorded. A post-Albian age has been tentatively ascribed to this possibly hydrothermal mineralization (Green & Welch, 1965). (Thin sections of the Whatley chert show it to consist of a mosaic of interlocking quartz grains with the sulfides, mostly pyrite, scattered throughout - a few ghost ooliths, differentiated from the matrix by the pyrite grown in them, are occasionally visible. Fibrous baryte, some of which is unreplaced, is widely disseminated in many specimens.)

Alternatively, the silica may have been derived from the Fullers Earth which, at one stage, overlay the Inferior Oolite at Whatley. Leaching of silica from these beds undoubtedly did occur but to what extent it contributed to the metasomatism seen in the underlying Inferior Oolite is not known. Such a process would be in operation over a long period of time which probably spanned the main lead-zinc-baryte mineralizing episode. This process could readily account for the blue-grey lensiform silica bodies in the Oolite, and for the localized silicification of the basal conglomerate and the underlying Carboniferous Limestone. The presence of lead and zinc sulfides and baryte in some of the lensiform bodies may be the result of post-mineralization silicification of sulfide-impregnated Oolite as described earlier. The massive cherts might have formed in a similar way: small lenses of massive black chert are occasionally found in juxtaposition with the 'normal' lensiform bodies. The massive chert could thus be the end product of the mechanism proposed. The continuous nature of this process is indicated by the silicified baryte-lined solution cavities, the presence of cryptocrystalline silica in the large mineralized solution cavity, and the unsilicified vein (Fig. 1) which cuts a silicified horizon in the Oolite. The pyrite in the lenses is possibly authigenic, the sulphur having been derived by bacterial reduction of sulphate from sea water. That pyrite is now found only in association with the silica and not in the Oolite is probably due to the relatively impervious nature of the siliceous rock, which has prevented breakdown of the pyrite by circulating oxygenated groundwater.

DATE OF MINERALIZATION

Lead-zinc mineralization of a similar age to that occurring in the Oolite is found elsewhere in this quarry. The majority of the veins are emplaced along a well-defined set of N-S trending joints. A lesser number trend approximately E-W. Prior to mineralization, many of the joints and associated Triassic faults became enlarged into narrow deep fissures and clefts. These were subseqently infilled with Triassic marl and/or flowstone calcite. Further infilling of these fissures and joints occurred during the Rhaetic-Jurassic marine transgression. Tensional forces, associated with the slow subsidence of the region at this time, caused these submarine structures to gape. Thus many of the mineral veins either contain partially replaced pieces of Rhaetic-Jurassic sediment, or cut fissure fill of Triassic-Upper Inferior Oolite age.

The precise age of mineralization is uncertain, but obviously it post-dates the Upper Inferior Oolite. Moorbath, on the basis of lead isotope studies of three Mendip galenas (Moorbath, 1962) gives an age for the main Mendip mineralization of 230±30 million years. One of his samples, from a mine dump near Cheddar, comes from the Lower Lias (Downside Stone). Post-Inferior Oolite mineralization similar to that found at Whatley occurs at many places in the East Mendips. No mineral veins have been seen to be truncated by the Inferior Oolite/Carboniferous Limestone unconformity. This strongly suggests that these veins are not simply derived from earlier deposits (cf. Dewey, 1921) but represent a distinct, if relatively minor, phase of mineralization. Allowing for the stated margin of error in the isotopic age, and the number of samples taken, an Upper Jurassic age for this mineralization is not impossible.

ACKNOWLEDGEMENTS

I would like to thank Mr. I.H. Ford and Dr. S.C. Matthews for helpful comments and discussions at all stages in the production of this note; Mr. G. Cross for supplying samples of vein material, and A.R.C. Ltd. for permitted access to Whatley Quarry. Mineral veins crossing the unconformity were first noticed at Whatley by Mr. I.H. Ford in 1953 but these were blasted away before they could be studied in full.

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BREEDING DENSITIES OF HERRING AND LESSER BLACK-BACKED GULLS ON STEEP HOLM

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INTRODUCTION

The gull population of Steep Holm has been counted at least once every decade since the turn of the century, when a mere handful of breeding birds occupied the western cliffs (Lewis, 1936). The most recent census was that carried out for Operation Seafarer in May 1969 (Cramp *et al*, 1974), at which time 5070 pairs of Herring Gulls *Larus argentatus* Pont. and 630 pairs of Lesser Black-backed Gulls *Larus fuscus* L. were nesting. Since actual nest counts were carried out over about 85% of the island, only very brief details have been published of this census (Steep Holm Gull Research Station Report for 1968). Our recent experience with relatively small numbers of workers - one in 1973, five in 1974 and eight in 1975 - indicates that it is no longer possible to conduct a full count with anything like this degree of completeness. Not only are large areas of the island inaccessib~~le,~~ notably the north slopes and the dense scrub in the south-east, but also the population is now so great that it is too time-consuming to search for all nests in those areas which can be reached. We were forced to adopt a different approach, which consisted of studying a number of quadrats and transects in detail and using the densities derived from these to calculate the population size indirectly. In order to be able to do this it was necessary to have some idea of the total surface area of the island. The whole process is thus quite complicated but it is worth setting out in detail so that future monitoring of the gull population can be more readily achieved.

SURFACE AREA OF THE ISLAND

Calculating the surface area of an object with such a complex shape as Steep Holm is a very difficult task. Since the cliffs were counted separately by walking round the island at low tide, these had to be excluded from the calculations. The precise height of the cliffs varies at different points, but is on average about 5m on the south side, 27m on the north side and about 36m along a small section of the north-west. Secondary cliffs and "towers" set back into the slopes on the northern side were not included in these cliff counts since they are largely invisible from the wave-cut platform beneath. 503 nests were counted on the cliffs in 1973 and 550 in 1974, including three nests on the east landing beach itself, just above high water level. Buildings were also treated separately and actual counts of nests on them made wherever possible.

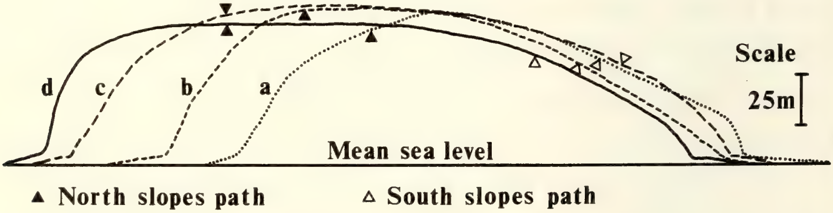

Fig. 1. Four sections of Steep Holm (a, b, c and d) used in measuring the distance from the top of the cliffs to the path.

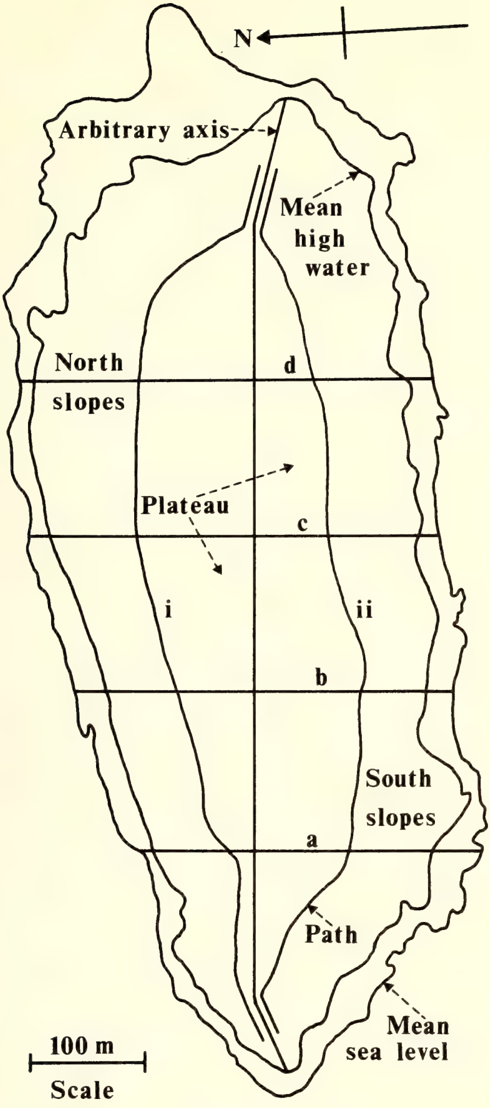
N
Arbitrary axis
Mean high water
North slopes
d
Plateau
c
i
ii
b
South slopes
a
Path
Mean sea level
100 m
Scale

Fig. 2. Plan view of the island showing the division into three main regions.

a, b, c and d = positions of sections in Fig. 1.

i and ii = lines used in measuring the "length" of the north and south slopes respectively.

The island was next divided into three separate regions - the plateau, the north slopes and the south slopes (see Fig. 2); the boundary between these areas being formed by the path circling the summit. Spot heights were taken from the map in Matthews (1938) and in combination with the 1: 2,500 Ordnance Survey map (ST 2260-2360), four scale sections were drawn of the island (Fig. 1) in the positions shown in Fig. 2. The distance from the top of the cliffs to the summit path was then measured on these sections. The mean of the four values thus obtained for the north slopes was then multiplied by the total length of the north slopes (measured as 'i' in Fig. 2) to give a very rough estimate of their total area. The south slopes were then treated similarly. These calculations make no allowance, however, for the large-scale surface corrugations formed by the couloirs, spurs and buttresses of the northern slopes. Careful examination of photographs taken from the channel, and the aerial photograph in Poulding (1965), suggests that the area of the north slopes needs to be increased by about one third to allow for these discontinuities. This adjustment was accordingly made. No increase was made in the figure for the south slopes since their surface is much more even. The plateau was assumed to be completely flat (an oversimplification) and its area measured directly from the 1: 2,500 map. The total areas for the three divisions work out as follows:-

plateau	81,128 m^2	
north slopes	87,133 m^2	
south slopes	66,160 m^2	
total	234,421 m^2	(58 acres)

This compares with the Ordnance Survey figure, which is based on a plan view of the island and therefore takes no account of its three dimensional nature, of 197,778 m^2. This would suggest that the calculated figure is, if anything, on the small side, though it should be remembered that the cliffs have been specifically excluded.

VEGETATION

Detailed accounts of the vegetation have been published on a number of occasions (e.g. Maclean & Hyde, 1924; Skene, 1938; Steep Holm Gull Research Station Reports for 1963, 1965 and 1968). For present purposes the plant cover was divided into four broad categories.

1. Sycamore *Acer pseudoplatanus* woodland. A restricted area of sizeable trees on the eastern slopes.

2. Scrub. Elder *Sambucus nigra*, privet *Ligustrum vulgare* and bramble *Rubus* sp. in varying proportions, forming impenetrable thickets in the south-east region of the island.

3. Alexanders *Smyrnium olusatrum*. Much of the plateau consists of pure stands of this species, occasionally mixed with hemlock *Conium maculatum* and stinging nettle *Urtica dioica*.

4. Open ground. All areas devoid of vegetation or with some prostrate plants such as grasses or lichens.

These cover types can be readily distinguished on reasonable scale aerial photographs. Using those taken by the Department of the Environment on 16th August 1966 (Sortie No. O.S.66.200, Print No. 0212, 1/7500) and 7th September 1971 (Sortie No. 39.3764, Print No. F41 0036, 1/1300), a plan vegetation map of the island was drawn up with the aid of a Grant map projector. The result is shown in Fig. 3. The scrub is evidently spreading across the plateau (Poulding, 1965), but this is obviously a

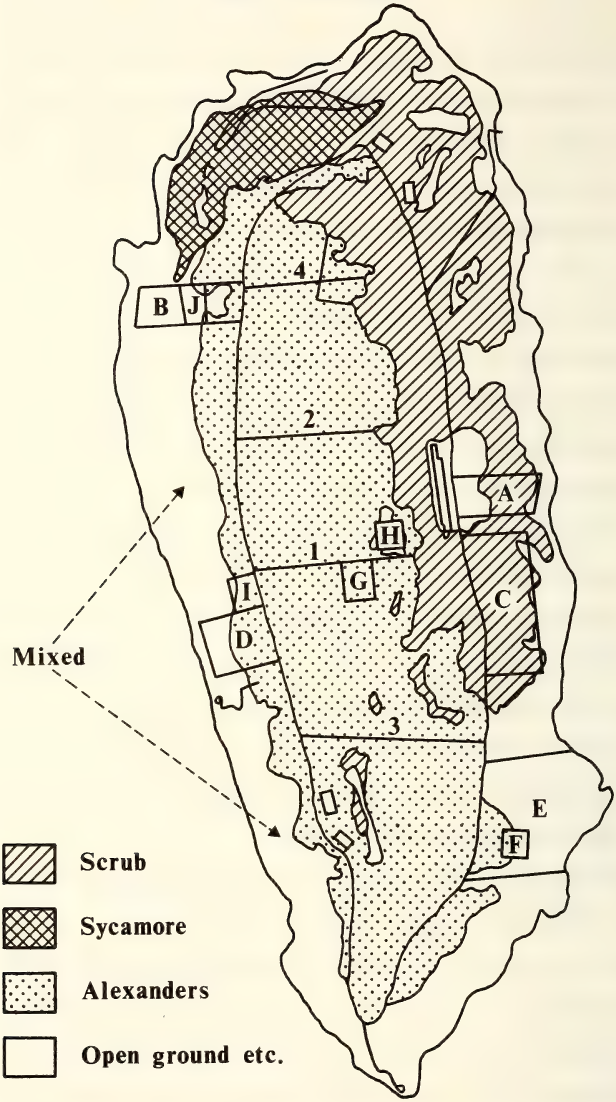
4
B
J
2
A
H
1
G
I
C
D
Mixed
3
E
F
Scrub
Sycamore
Alexanders
Open ground etc.

Fig. 3. Vegetation map with the position of quadrats and transects marked. Slightly simplified.

very slow process as there has been no appreciable change between 1966 and 1975. The area of each of the different cover types on the plateau was then estimated by cutting out the various sections on a copy of the map and weighing them. For the south slopes, although the map presents an oblique view, it does provide a reasonable proportional representation of the true cover since the slope is fairly constant. This is not true of most of the north slopes, however, which had to be treated rather differently. They in fact consist of a mixture of cliffs, open ground, grass and alexanders, with open ground constituting the greatest area. It was impossible to map these divisions accurately and so the areas calculated for the different types of vegetation are only approximate. In fact the area of highest nest density (labelled as "mixed" in Fig. 3) has been relatively underestimated in Table 2.

TABLE 1. NEST DENSITY IN CENSUS PLOTS.

	Date counted	Size(m^2)	No. of nests	Cover, etc.	m^2/nest
Quadrat H	8/5/75	455	35	Bare, flat	13.0
" J	8/5/75	381	24	Bare, N.slopes	15.9
Photograph E	20/4/74	7708	482	Bare, S.slopes	16.0
Quadrat A	4/6/73	2338	130	Mixed, S.slopes	18.0
" B	6/6/73	2439	110	Mixed, N.slopes	22.2
" D	18/4/74	2665	115	Mixed, N.slopes	23.2
" F	7/5/75	455	18	Bare, S.slopes	25.3
" I	8/5/75	611	24	Mixed, N.slopes	25.5
Transect 2	5/6/73	199	6	Alexanders	33.1
" 1	3/6/73	236	7	Alexanders	33.7
" 4	17/4/74	344	10	Alexanders	34.4
" 3	17/4/74	530	15	Alexanders	35.3
Quadrat C	19/4/74	7612	106	Scrub, S.slopes	71.8
" G	7/5/75	743	7	Alexanders	106.1

NEST DENSITY IN THE SAMPLE PLOTS

Four transects and nine quadrats were censussed over the three year period (Fig. 3). In addition, a section of the south slopes near Split Rock was photographed from a boat and the number of occupied nesting territories counted later. The size of the nest territories in the sample plots (Table 1) varied from 13.0 to 106.1 m^2/nest. Bare areas with little vegetation had figures consistently between 13 and 25 m^2/nest, whilst the densely vegetated plots ranged from 33 to 106 m^2/nest. The lowest nest density was in quadrat G, an area with a continuous cover of alexanders, deliberately chosen because of its inaccessibility to gulls. A path had to be cut both to delineate this quadrat and to provide access to it. Several nests subsequently appeared along the length of this path, which was cut in May 1975. These nests were of course excluded from the counts, but they do serve to illustrate that a surplus of birds are available at the colony to take advantage of any new nesting opportunities.

The transect figures provide the best estimate of average nest density for the plateau since their precise position was chosen at random (though they were deliberately spaced out). They differed from quadrat G in including occasional very small bare patches and areas of low vegetation, both of which allow more gulls to land and thus establish nesting territories. The mean figure of 34.4 m^2/nest has thus been used in calculating the total number of birds nesting in alexanders.

The nest density in scrub also depends on its accessibility, the absence of bramble being particularly important. Quadrat C was fairly representative and so the nest density measured there has been used for all areas of scrub and also for the sycamore wood since no separate counts were conducted there. The figure used for the "mixed" zone along the north slopes is quite critical since it represents such a large proportion of the total. The weighted mean density (23.0 m^2/nest) for all quadrats in this type of vegetation (B, D and I) was thus used. For all the other bare patches on the north slopes the density figure from quadrat J was used. For the large area of open ground on the south slopes the density from photograph E was employed and in all other bare patches the maximum density figure (quadrat H) was used.

TABLE 2. AREAS OF DIFFERENT COVER TYPES AND THEIR ESTIMATED GULL POPULATIONS.

Site	Type	Area(m^2)	No.of Nests
Cliffs		n/a	550
North Slopes	Mixture of open ground, alexanders, etc.	67,027	2,921
	Sycamore Wood	16,749	233
	Bare patches on upper slopes	1,881	119
	Nissen hut bases	724	30
	Scrub	445	6
	Bare patches in sycamore wood	256	20
	Buildings	50	2
South slopes	Open ground	33,902	2,120
	Scrub	26,275	366
	Alexanders	3,668	107
	Bare patch below barracks	1,756	98
	Buildings	559	10
Plateau	Alexanders	59,419	1,727
	Scrub	18,289	255
	Bare patches	1,448	111
	Barracks, buildings and surrounds	1,104	6
	Other buildings	531	11
	Nissen hut bases	337	14
Total		234,420	8,706

The estimates for each area are shown in Table 2. The total gull population of the island amounts to 8,706 pairs. Since data for this estimate were collected in 1973, 1974 and 1975, it is best considered as applying to 1974. The final step is to arrive at an estimate of the number of each species present (see Table 3). A figure of 17.59% Lesser Black-backed Gulls has been used for the plateau, alexanders and scrub, while 1.98% has been used for the rest. The proportion of adults caught (10% overall) lies between these two figures, probably because most catching was done at the transition between the two groups of habitats i.e. along the summit path. This gives final 1974 population estimates for the two species as follows.

Herring Gull	8,113 pairs
Lesser Black-backed Gull	593 pairs (6.8%)

TABLE 3. ESTIMATES OF THE PROPORTION OF EACH SPECIES PRESENT.

Area	Method	Herring Gull	Lesser Black-backed Gull	
		No.	No.	%
Plateau and scrub	Counts of adults in air and on ground	267	57	17.59
Near summit path	Adults caught at night by dazzling	150	17	10.18
Quadrats F, H, I & J	Nest count	99	2	1.98
Cliffs and slopes	Counts of adults in air and on ground	443	2	0.45

DISCUSSION

The population has increased by about 52% since the 1969 census, representing an annual rate of increase of about 8%. This is rather lower than that observed at some recently founded colonies such as Flat Holm (G.P. Mudge, in prep.) and does suggest that there is some "resistance" to further expansion, caused presumably by the shortage of available nesting sites. However, the island is still by no means fully occupied. The presence of well defined "club" sites where non-breeding birds congregate, many of which are immature (Beer, 1968) shows that not all available space is occupied by breeders. Such "clubs" are very conspicuous on photographs taken from the channel because of the very high density of birds. Two such sites in particular were noted during our visits, one at the side of Split Rock Battery, and the other at the bottom of the south slopes, just east of the barracks.

The minimum average size of nesting territories at a number of colonies is shown in Table 4. It is a sobering thought to reflect that if the density of gulls on Steep Holm were to reach the maximum figure recorded on the Isle of May (areas of scrub, sycamore and alexanders have been excluded, as densities there are very unlikely to increase), the population would rise to over 50,000 pairs. It is, however, difficult to reconcile this enormous potential, with the low current rate of population increase and the rapid occupation of newly available sites such as the area of cleared alexanders referred to earlier. Population density does appear to be stabilized by territorial behaviour at least in the bare areas (based on personal observations from a hide on quadrat H). Although purely speculative, it is tempting to suggest that different levels of population agression could explain both the large differences in minimum nest territory size at different colonies and the year to year variations (mostly increases) at each individual colony. This is only one of several explanations but it would help to explain why so many workers consider the colonies they study to be "full" and yet the breeding population subsequently continues to expand.

TABLE 4. MAXIMUM MEAN DENSITIES RECORDED AT SOME MAJOR GULL COLONIES.

m^2/nest	Colony	Composition*	Source
2	Isle of May	Nearly all HG	Parsons (1971)
4	Bellow Island, Michigan, U.S.A.	HG	Ludwig & Tomoff (1966)
6	Pismire Island, " "	HG	" "
7	Walney Island, G.B.	HG/LBBG mixed	MacRoberts & MacRoberts (1972)
13	Steep Holm, G.B.	Mostly HG	Present study
14	Flat Holm, G.B.	HG/LBBG mixed	Mudge (in prep.)
16	Skokholm, G.B.	Mostly LBBG	Davis (1973)

* HG = Herring Gull, LBBG = Lesser Black-backed Gull.

The ultimate reason for the continued increase in size of the Steep Holm gull colony is self-evident. 74% by volume of the food material brought to Herring Gull chicks during 1975 consisted of items taken from refuse tips. During the summer, just about half of the adults commute to the southern side of the Bristol Channel and half travel to South Wales. Although the latter distance is larger, there are a greater number and variety of tips available near the coast in this region. Future trends in the size of the Steep Holm gull population will continue to be of great interest, not least to see if the territory size in open areas does in fact decrease further.

Refuse disposal methods can be expected to change gradually during the years to come and this in turn will have an impact upon the gull population.

ACKNOWLEDGEMENTS

During 1973 and 1974, one of us (G.P.M.) was in receipt of a Natural Environment Research Council Studentship. Permission to visit the island was initially granted by the Steep Holm Trust and later by the Kenneth Allsop Memorial Trust. Our thanks must also go to the many boatmen who have taken us to the island, and especially the Reardon Smith Nautical Training College. Finally, we are grateful to the eight undergraduates of University College who helped us count the sample plots.

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Frontispiece (facing page 1): Gulls on Steep Holm. Photographs by P.N.Ferns and J.H. Savory.

THE BUILDING STONES OF THE CHEW VALLEY AREA

By K.C. ALLEN

Department of Botany, University of Bristol

Summary:- The Chew Valley area provides a variety of building stones, which are reflected in the very different appearance of adjacent villages. West Harptree for example is almost entirely built of Dolomitic Conglomerate, Bishop Sutton of White and Blue Lias, Temple Cloud of Pennant, Chew Magna of red Triassic Sandstone and Ridgehill of grey Triassic Sandstone. In Chew Stoke the houses are usually either of grey Triassic Sandstone or White and Blue Lias, whilst in Pensford the dominant Pennant is often mixed with White and Blue Lias, giving a speckled appearance to some buildings, and in Upper Stanton Drew, the houses are a colourful mixture of red sandstone, white limestone and grey Pennant Sandstone. This reflects closely the stone available near the Chew Valley villages for, in earlier times, transport of the stone was by horse and cart, and therefore the distance stone was carried was usually less than one mile.

INTRODUCTION

Vellacott & Hewett (1911) in the Victoria History of Somerset, devoted five pages to the building stones of the county. However, these authors were concerned with the fine building stones, namely Doulting, Ham Hill, Bath and Dundry Stone, for which the county is especially noted. No mention was made of the other building stones of which the buildings of the Chew Valley area form a part.

The area described is shown in Figure 1, and the relevant geological outcrops and traceable stone quarries in Figure 2. Of the forty-six quarries here recorded, only one (Sutton Hill Quarry, Bishop Sutton, 597586) is at present working. This quarry is in White and Blue Lias (Donovan 1956, p. 191), and was formerly quarried for both building stone and lime-burning, but the latter has now ceased. The last quarries to close in the area were in the Pennant Sandstone at Temple Cloud.

It is impossible to trace every stone quarry which existed in this area.

Some were shallow excavations for a farmer's own needs, or for the building of a cottage from stone in an adjacent garden. These are often filled in, and where no records exist, are undetectable. Some of the quarries recorded may not have produced stone for building; in the White and Blue Lias, for example, some may have been solely for lime-burning or roadstone. Certainly there is evidence from the older inhabitants that White and Blue Lias was formerly used as a roadstone. The Blue Lias quarry north of Chew Magna (Fig. 2, No. 46) produced much of the roadstone for Chew Magna at least until 1920. Hudd & Richardson (1915) on a geological excursion from Bristol to Dundry and Stanton Drew, referred to the "dusty condition of the roads", and recorded that when the party arrived back in Bristol "they were literally covered with dust, and those wearing dark clothes looked as if they had stepped out of a flour mill". This was presumably from the White and Blue Lias used as a roadstone. It is likely however that most of the quarries recorded did produce some building stone.

THE BUILDING STONES

Carboniferous Limestone. The Carboniferous Limestone does not crop out within the area under discussion. However, it is widely quarried on Mendip and Broadfield Down adjacent to the Chew Valley area (Somerset County Council, 1971), and is mentioned here because, owing to the lack of available stone now in this area, it is sometimes used as a facing stone in modern houses. It is however predominantly used for roadstone, concrete aggregate and railway ballast.

Upper Coal Measures - Pennant Series. The Pennant Sandstone is the oldest rock quarried for building stone in the area under consideration.

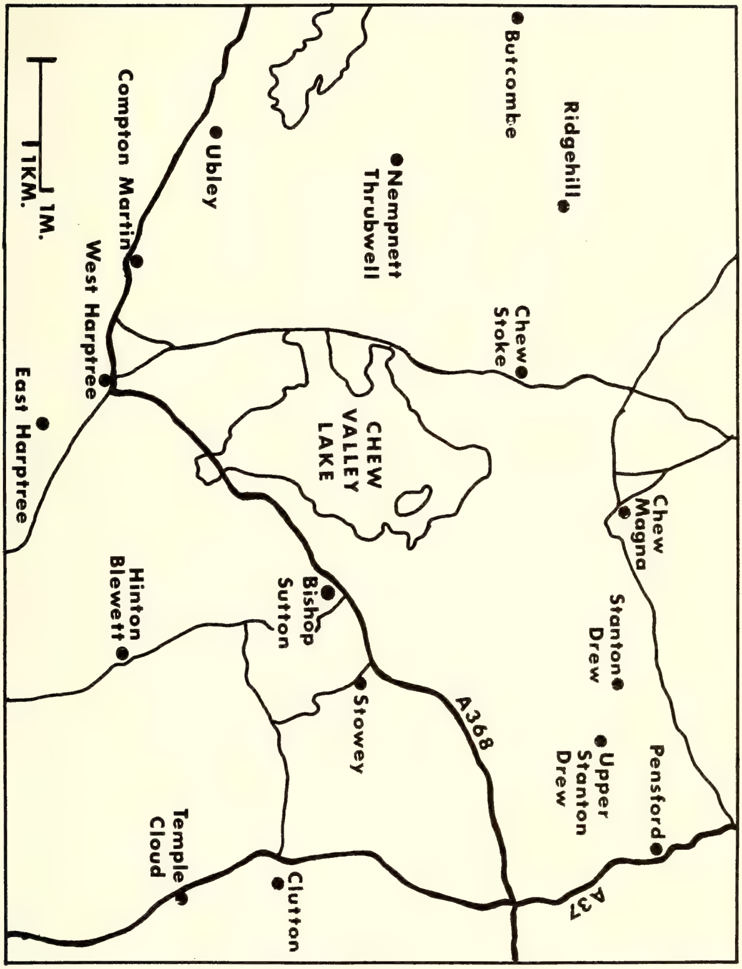

Ridgehill
Butcombe
Nempnett Thrubwell
Ubley
Compton Martin
West Harptree
East Harptree
1M.
1KM.
Chew Stoke
CHEW VALLEY LAKE
Chew Magna
Stanton Drew
Upper Stanton Drew
Pensford
A37
A368
Bishop Sutton
Hinton Blewett
Stowey
Temple Cloud
Clutton

Fig. 1 Map showing the villages referred to in the text.

It crops out around Temple Cloud (624578), south of Stanton Drew (595617) and at Moorledge (592623) south-east of Chew Magna (see Fig. 2). Two small quarries (Fig. 2, Nos. 5, 6 and appendix) worked the Pennant Sandstone south of Stanton Drew, and it is probable that some of the Pennant which occurs frequently in the buildings of Upper Stanton Drew came from these small quarries. The workings (Fig. 2, Nos. 1-3) on the north side of East Court Road, Temple Cloud, were the largest building-stone quarries in the area. Records (H.M.S.O., 1905) indicate that in 1904 the three quarries employed forty-nine people, and in 1910 (H.M.S.O., 1911) United Stone Firms Ltd. had forty-four employees at their Pennant No. 6 quarry (Fig. 2, No. 3). As late as 1937 (H.M.S.O., 1939) three years before the last quarry closed, there were forty-seven employees still working in the two quarries. Loupekine (1956) records a Pennant Sandstone quarry at Temple Cloud still working in 1955 but this is incorrect (Rogers, 1948 and local information). A number of smaller pits (Fig. 2, No. 6) were once worked in the Bubbin's Brake area north of Temple Cloud.

The Pennant Sandstone from the Temple Cloud quarries was used for building most of the houses in Temple Cloud and Pensford and, as transport improved around the turn of the century, in other neighbouring villages as well. Both the church at Temple Cloud and the Pensford viaduct were built from the Pennant Sandstone from these Temple Cloud quarries.

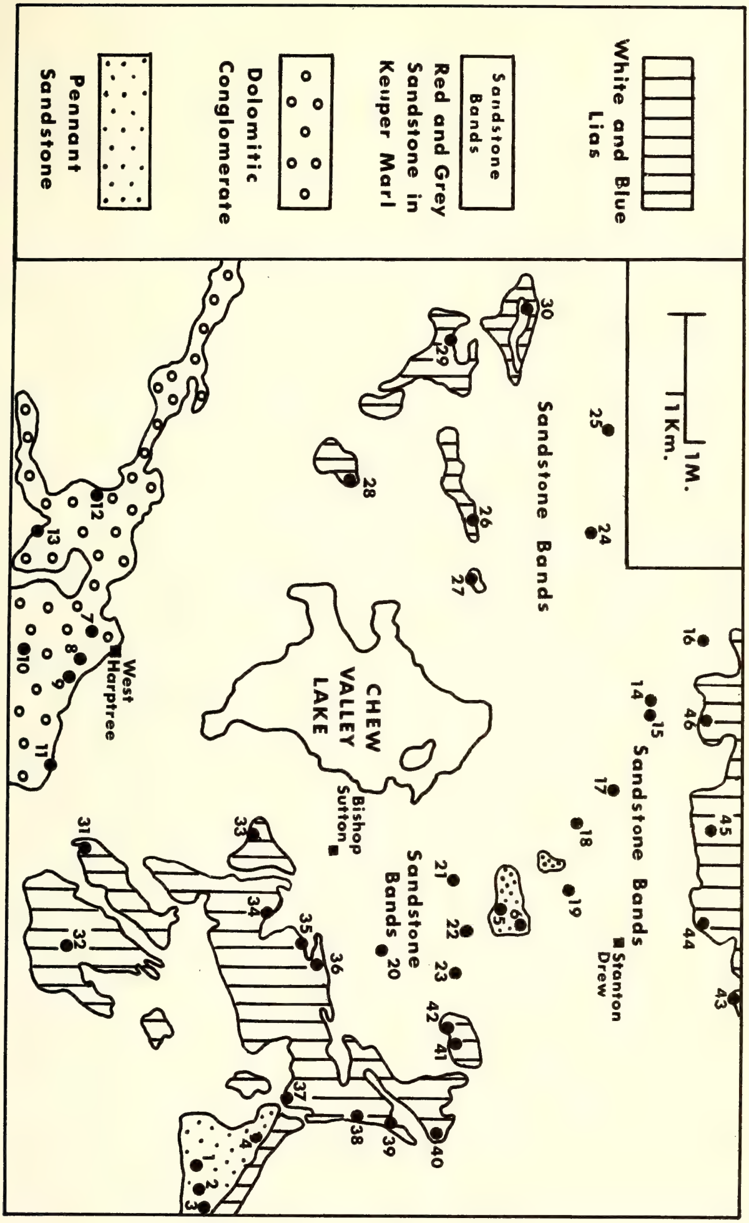
The quarries recorded above at both Temple Cloud and south of Stanton Drew are all in the upper part (Mangotsfield Group) of the Pennant Series. An old quarry (the Bromwich Iron Mine), in the lower part (Downfield Group) of the Pennant Series to the east side of the A37 in Temple Cloud (619577), was not worked for building stone, but for haematite, goethite and limonite in fissures and joints in the Pennant Sandstone.

Keuper Marl - Dolomitic Conglomerate. The Dolomitic Conglomerate crops out along the northern slopes of the Mendip Hills in the south of the area here considered, where it was deposited as alluvial fan material from weathering by wind and rain of the Carboniferous Limestone uplands. The rounded or angular dolomitised limestone fragments vary considerably in size, and are usually cemented with a red sandy marl. Some of the building stones have few limestone fragments and are predominantly of red sandstone, representing the diachronous gradation from the coarse conglomerate into the red sandstone both laterally and distally away from the uplands. The variable nature of individual stones can be clearly seen in many of the buildings.

The Dolomitic Conglomerate forms an attractive darkish-red building stone, and was quarried mostly around East and West Harptree (see Fig. 2 and appendix). It was used extensively in the villages along the northern edge of the Mendips, namely Ubley, Compton Martin, West Harptree and East Harptree in the area studied. Towards East Harptree, the Dolomitic Conglomerate becomes silicified, and the orange silicified stones can be clearly picked out amongst the redder stones in the buildings and walls of East Harptree.

Keuper Marl - Sandstones. The Keuper Marl crops out over much of the lower central part of the Chew Valley area, south of Bristol. Within the dominantly fine-grained marl sequence, a number of sandstone bands occur, which were widely used as a building stone in the neighbouring villages. Kellaway (in Green & Welch, 1965, p. 66) has divided the sandstone in the Chew Stoke area into four main groups, the Woodford Hill, Castle Lodge, Chillyhill and Butcombe Sandstones. However, east of Chew Magna, it is impossible to divide the sandstones into these groups, particularly

Opposite: Fig. 2 Map showing the relevant geology and known stone workings (see appendix for details). A few villages are included on this map to aid location.


White and Blue Lias
Sandstone Bands
Red and Grey Sandstone in Keuper Marl
Dolomitic Conglomerate
Pennant Sandstone
1M.
1Km.
Sandstone Bands
Sandstone Bands
Sandstone Bands
CHEW VALLEY LAKE
West Harptree
Bishop Sutton
Stanton Drew
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as the marl itself becomes more sandy towards the base. Therefore, for the purpose of studying the building stones, it is best to divide them into the red sandstone (mostly Castle Lodge, Chillyhill and undivided sandstone east of Chew Magna) and the grey sandstone (mostly Butcombe Sandstone).

Red Sandstone. This is a calcareous sandstone of variable quality, ranging from a light creamy-red to red, and crops out from Chew Stoke mostly to the east. The best quality stones, which are dressed, are found in the larger houses, whilst the cottages are built of random stone often of poorer quality, with marly bands and lenses.

Chew Magna provides the best example of a village in which almost all the older houses are built of this red Triassic sandstone. Much of the sandstone from these buildings came from the two old quarries in Battle Lane, Chew Magna (Fig. 2, Nos. 14 and 15, and appendix) and the old quarry on the southern edge of the village (Fig. 2, No. 17). The hamlet of Stowey and the neighbouring houses are also built of red sandstone, and this stone was probably supplied by the quarry in Stowey (Fig. 2, No. 20) and three smaller quarries to the north and east (Fig. 2, Nos. 21-23). In Stanton Drew, particularly the part around the church, red sandstone is the dominant building stone, but is often used with White and Blue Lias. In Upper Stanton Drew it is used with both White and Blue Lias and with Pennant Sandstone, all three usually occurring in the same building. The red sandstone for Stanton Drew probably came from the quarries south-east of Chew Magna (Fig. 2, Nos. 17-19) and possibly from the quarries north and east of Stowey. There is no evidence of red sandstone excavations within the village of Stanton Drew.

Grey Sandstone. The grey sandstone (mostly Butcombe Sandstone) which crops out to the west of Chew Stoke, is usually much harder than the red sandstone. It is highly calcareous, and often grades into an arenaceous limestone. It forms the dominant building stone in Ridgehill and provides the stone for many of the buildings in Butcombe and Chew Stoke, and some in Nempnett Thrubwell. Although there are several road-side exposures in the grey sandstone there is little evidence of known quarries. Woodward (1889) records two quarries to the north of Chew Stoke; one east of Whitling Street and the other north-east of Nuthill (North Hill) Farm in which he recorded grey limestones and red and grey marls. I can find no evidence of the first quarry, but the second is probably the small quarry at 549628 (Fig. 2, No. 24) now exposing only red marl. It is possible that these two quarries produced some of the grey sandstone recorded in the nearby villages. The only other known quarry in the grey sandstone is north-west of Ridgehill (Fig. 2, No. 25).

White and Blue Lias. The White and Blue Lias forms the high ground from the A37 west of Clutton to Burledge Hill south-east of Bishop Sutton, and south to Hinton Blewett. It also forms Chew Hill north of Chew Magna, outcropping east to Norton Malreward; and the high ground around Nempnett Thrubwell and Butcombe.

The sequence is basically an alternation of limestone with calcareous shales and clays; the limestone bands being used as the building stone. About half the quarries recorded here in the Chew Valley area are in White or Blue Lias, and often in both. As mentioned previously, some of these quarries may have been solely for roadstone or lime-burning, but as the White and Blue Lias has been used abundantly as a building stone in the area, many of them must have been quarried at least in part for building purposes. Although differences between White and Blue Lias can usually be distinguished when the rock is fresh, they are included together here because the Blue Lias whitens on weathering, and it is not always possible to distinguish between the two, particularly as they were often quarried together and used in the same buildings. As a generalisation, the White Lias is most common in walls, and the Blue Lias in buildings. In the White and Blue Lias, the hard limestone bands which alternate with the calcareous shales and clays are usually only a few inches in thickness. These could be broken into manageable blocks, and therefore provided a popular building stone. This, coupled with the fact that there is an extensive outcrop in the area (Fig. 2), results in White and Blue Lias being used in many of the villages. Though considered a rather cold stone, it can in areas of low pollution, as for example Hinton Blewett, support a rich flora of lichens, and mellow attractively.

Bishop Sutton provides perhaps the best example in the area of a village built predominantly of White and Blue Lias. Others where White and Blue Lias is used fairly extensively include Hinton Blewett, Chew Stoke (particularly in the south of the village, away from the grey Triassic sandstone), Nempnett Thrubwell, and Clutton. In Stanton Drew it is mixed with red Triassic sandstone, in Upper Stanton Drew with red sandstone and Pennant, and in Pensford it is subordinate to the Pennant. The quarries which supplied the building stone for these villages are shown in the appendix. As mentioned previously, the White and Blue Lias quarry at Stowey Hill is the only one at present working in the area, and now provides the only natural stone alternative to Carboniferous Limestone. Consequently a number of new houses are faced with this stone.

Other building stones. This paper is concerned primarily with the building stones quarried in the region and used in the domestic buildings. Certain stones quarried outside the area, for example Bath Stone and Dundry Stone, have been used in the Chew Valley area, particularly for the window and door surrounds of the early larger houses and also some of the later smaller houses.

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APPENDIX

List of grid references to stone quarries recorded in the area, and shown on Figure 2. The word quarry is used for all excavations, whether it is a small pit, or a larger working.

Upper Coal Measures - Pennant Sandstone

1.	625578	East Court Road, Temple Cloud
2.	628578	East Court Road, Temple Cloud
3.	632578	East Court Road, Temple Cloud
4.	624585	at least three small excavations near Bubbin's Brake, Temple Cloud
5.	594615	Curl's Farm, S. of Stanton Drew
6.	596618	Curl's Wood, S. of Stanton Drew

Keuper Marl - Dolomitic Conglomerate

7.	558566	two quarries, S.S.W. of West Harptree
8.	562563	west of Harptree Coombe
9.	564563	N.E. end of Harptree Coombe
10.	561557	S. end of Harptree Coombe
11.	575560	off the B3114 E. of East Harptree
12.	542567	S.W. of Compton Martin Church
13.	544559	Wellsway

Keuper Marl - Red Sandstone

14.	570633	Battle Lane, Chew Magna
15.	572633	Battle Lane, Chew Magna
16.	562642	Bithams Wood, Chew Magna
17.	581628	S.E. of Chew Magna
18.	583626	S.E. of Chew Magna
19.	592623	E. of Moorledge, Chew Magna
20.	599600	E. side of Stowey
21.	590608	W. of Sutton Court, Stowey
22.	597612	N. of Sutton Court, Stowey
23.	602610	N.E. of Sutton Court, Stowey

Keuper Marl - Grey Sandstone

24.	549628	N. of North Hill Farm, Chew Stoke
25.	535630	N.W. of Ridgehill

White and Blue Lias

26.	547613	Gravel Hill, Chew Stoke
27.	553612	S.W. of Chew Stoke
28.	541598	Breach Hill, S.W. Nempnett Thrubwell
29.	524610	N.W. of Nempnett Thrubwell

30.	519619	N.E. of Butcombe
31.	585563	South Widcombe, S.E. of Hinton Blewett
32.	598560	S. of Hinton Blewett
33.	584585	Burledge Hill, Bishop Sutton, at least two quarries
34.	597586	Sutton Hill, Bishop Sutton
35.	601592	S. of Stowey
36.	603593	S. of Stowey
37.	617589	W. of A37, W. of Clutton
38.	620598	N. of Clutton
39.	620602	N. of Clutton
40.	623607	Red Hill, E. of A37, N. of Clutton
41.	609608	S.W. of Stanton Wick
42.	611609	S.W. of Stanton Wick
43.	604644	S. of Norton Malreward
44.	567640	N. of Stanton Drew
45.	585642	E. of Blacklands, N.E. of Chew Magna
46.	572641	Chew Hill, N. of Chew Magna

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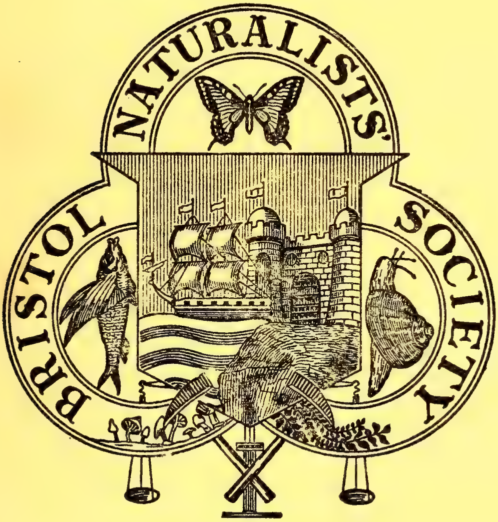
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PROCEEDINGS OF THE BRISTOL
NATURALISTS' SOCIETY

VOLUME 36

1976

COUNCIL, 1976

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Membership at the end of the year stood at 786, including 41 juniors. There are 9 affiliated societies. At the Annual General Meeting the officers and members of Council were elected with Mr. D. Hamilton as President.

The Annual Buffet Supper was held in the Royal Hotel with Dr. R. Bradshaw of the Geology Department of the University as guest speaker on "Glimpses of the Antipodes".

The Society has signed a contract with University Microfilms Ltd. allowing the company to sell the Proceedings reproduced on microfilm. A 10% royalty on anything sold would be payable to the Society. The Editor of the Proceedings will liaise with the company.

The Society has established a cordial liaison with the Kenneth Allsop Memorial Trust and the Trust has invited the Society to submit ideas for the conservation and/or modification of the flora and fauna of Steep Holm, bearing in mind that the Trust should be financially self-supporting as far as possible.

The consistution of the National Trust Leigh Woods Management Committee has been revised and this Society has been given the privilege of nominating a member to the Committee. Mr.P J M Nethercott has been so nominated.

The Society is very grateful to all those members who assist in the distribution of the Bulletin.

With deep regret, we record the deaths of:

Mrs. M.E. Boyce
Mr. H. Kay
Mr. C.W. Potter
Dr. D.C. Prowse
Mrs. S. Savage

AUDREY HECKELS, *Hon. Secretary*

REPORT OF THE CONSERVATION COMMITTEE, 1976

The Frome Valley Nature Trail was opened on Saturday, April 10th, by the Deputy Lord Mayor of Bristol, Councillor W. Jenkins. The event featured in Radio Bristol and the Bristol Press, and was considered to be very successful.

The Glenside Hospital Authority have been informed of the offensive tipping in the woodlands opposite Snuff Mills Park; this is particularly undesirable in the vicinity of the Nature Trail. They have now stopped tipping and are taking steps to remove the rubbish. The removal of diseased elms and replanting has been agreed and this will take place as and when funds are available.

Further consideration of the proposed development at Rockwell House Estate has ensured that many trees and shrubs in line with our recommendations will be retained.

We have advised Sedgemoor District Council that the increased use of power boats/water skiing in the Burnham-on-Sea area could have adverse effects on the bird life of Bridgwater Bay Nature Reserve and this matter is now under consideration for a satisfactory long term policy.

A Severn Estuary Conservation Group has been formed to represent all the various wildlife conservation bodies along both sides of the Estuary (and including national organisations, R.S.P.B. and B.T.O.). The Group aims to provide a coordinated conservation approach to development along the Estuary, to search for and establish information on the natural history of the Estuary and eventually publicise its ecological importance. Your Committee is represented on this group, which meets at Slimbridge.

The Committee have initiated a survey of the River Trym, but much of this work was hindered by the drought, so that it will not be completed until next year. This natural history survey will be made available for the County Planning Landscape and Conservation Section as a contribution to their report on the ecological value of Avon's waterways.

Information on recent legislation for the protection of wild life has been collected and a leaflet issued to all members.

Your Committee is represented on the Joint Committee for Nature Conservation in Avon and this has direct contacts with the County Trusts, the Nature Conservancy Council and the County Planning Landscape and Conservation Section. Our recommendations and observations this year have been concerned with formulating a Rural Road Verges Policy, with the Draft Interim County Development Plan, with the Kingswood Local Plan and the Avon Valley Local Plan. The ecological section of this latter plan takes full account of the contents of the Avon Valley Report issued by this Committee in March 1972 when it was feared that a Saltford By-Pass might be constructed along the old Bath to Mangotsfield railway.

Liaison has been made with the Kenneth Allsop Memorial Trust for Steep Holm and it has been agreed that your Committee should be represented on their new management team next year.

The Ashton Park Nature Trail now requires considerable conservation management, so by agreement with the Parks Manager, Mr. A. Barber, our recommendations are being carried out by the Bristol Conservation Corps under Mr. A. Lee with whom we have close liaison.

K.T. BATTY, *Chairman*

REPORT OF BOTANICAL SECTION, 1976

At the Annual General Meeting in the Botany Department Herbarium on 26th January, 1976, the following were elected:- President: Dr. A.F. Devonshire; Secretary and Treasurer: Miss I.F. Gravestock; Committee: Dr. T.E.T. Bond, Mrs. C.H. Cummins, Mrs. N. Vaughan Davies, Mr. C.H. Hurtfurt, Mr. P.J.M. Nethercott, Dr. D.H. Peregrine, Mrs. T.H. Silcocks and Dr. M.C. Smith.

The following winter meetings were held:-

January 26: Annual General Meeting and Members' Evening.
February 23: Symposium on individual plants.
March 22: The Propagation of Hardy Orchids by Dr. M.C.Smith.
October 25: Plants and problems near the River Severn by Mr. Trevor G. Evans.
November 22: Botany in Foresic Science by Mr. D.J. Reade.

The following field excursions took place, under the leadership of those shown:-

March 20: Ebbor Gorge, to study bryophytes. Mrs. J.A. Appleyard.
May 1: Chew Magna and Knowle Hill. Mrs. J. Cox.
May 15: Frome Valley Nature Trail and Environs. Miss I.F. Gravestock.
May 19: Royal Fort Gardens. Dr. A.F. Devonshire.
May 22: Around the Westbury-on-Trym Valley. Mr. C.H. Cummins.
June 19: Selsley Common and Coaley Peak. Mrs. T.B. Silcocks. A good show of *Gymnadenia conopsea*. Other orchids appeared to have been adversely affected by the heat.
June 22: Leigh Woods, to study ferns. Dr. M.C. Smith.
July 10: Selborne. Mr. P.J.M. Nethercott. The party ascended the Hanger, then visited The Wakes, Gilbert White's old home, which is now a museum. After seeing its grounds and gardens and the church and churchyard, a walk was taken over Long and Short Iyths. *Helleborus viridis* and *H. foetidus* were seen where they had probably been seen by White.
July 15: Keynsham Park and Chew Valley. Mr. C.H. Hurfurt.
August 14: Bath Botanic Garden. Dr. A.F. Devonshire.
September 11: Kennet and Avon Canal, Bath. Dr. A.F. Devonshire.
October 9: Fungus Foray to Westonbirt. Joint meeting with British Mycological Society. Over 100 species were recorded, including 79 Agarics and Boleti.

Colossal *Lepiota rhacodes* were abundant, and *Agaricus langei* were numerous. Also seen were a large gathering of *Cyathus olla* and some *Lepiota bucknallii*, named after Cedric Bucknall (see his series of papers in the B.N.S. Proceedings, 1879-91). Dr. T.E.T. Bond and Mr. Collings.

I.F. GRAVESTOCK, *Hon. Secretary*

REPORT OF ORNITHOLOGICAL SECTION, 1976

At the 53rd A.G.M., Mr. R. Thomas was re-elected President, Mr. R. Bland Secretary, and Mrs. J. Humphris was elected Treasurer. Three new members of the committee were elected, P. Carter, H. Rose and Miss J. Haskins. The other committee members re-elected were Messrs. S.M. Taylor, P.J. Chadwick, R. Curber, H.R. Hammacott, P. Farmer, R. Chadwick, Dr. E. Brownell, Miss E. Harriss.

During the year ten indoor meetings were held, including three specially designed for beginners, and one joint meeting with the Mammal Section on owls and their prey. Average attendance was 43. Eighteen field meetings were held, all being well attended. The most unusual was "The hunt for the Dynamic Starling" attended by the Times Diary, and three were specially linked to the indoor beginners meetings.

Fieldwork of many kinds continued to be well supported, and it is hoped to publish a review of the fieldwork of the last decade shortly. The national nightingale survey, the nest record scheme, and the site registration survey were all well-organised. Local surveys of breeding house martins and swifts, kestrels in the City of Bristol, the tidal River Avon, and birds in gardens in winter were continued, and an attempt was made to gather information on overwintering warblers.

R.L. BLAND, *Hon. Secretary*

REPORT OF MAMMAL SECTION, 1976

At the Annual General Meeting the following officers were elected:- President: Miss E.J. Lenton; Secretary and Treasurer: Mr. R.A. Burberry; Mammal Recorder: Mr. R.G. Symes; Committee Members: Messrs. Chapman, Jayne, Surch and Walker and Dr. Savage.

Six indoor meetings were held:
January 13: AGM and Members' slides.
February 18: Owls and their Prey, by Mr. S.M. Taylor and Mr. R.G. Symes (joint meeting with Ornithological Section).
March 9: London Zoo Animals, by Dr. M. Brambell.
October 8: Red Squirrel Conservation, by Dr. A.M. Tittensor.
November 12: The Bestiary as a source of local fauna, by Dr. W. George.
December 14: Carnivores, by Dr. R.J.G. Savage.

The average attendance of 39 was slightly down on that of 1975, but this figure conceals a sharp decline in the last three meetings.

The following field meetings were held:
January 11: Dormouse Survey, Mr. A.F. Jayne.
February 1: Fox spotting, Mr. F.H. Rawlings.
February 22: South Gloucestershire Mammal Survey, Mr. R.A. Burberry.
March 28: Lansdown Walk, Miss E.J. Lenton.
April 25: Axe River Survey, Miss E.J. Lenton.
May 7, 14, 21, 28: Badger Watches, Mr. A.F. Jayne.
May 9: Early morning watches, Miss E.J. Lenton.
July 18: Mendip Walk, Mr. G. Walker.
August 15: Leigh Woods, Mr. R.A. Burberry.
September 26: Mascall's Wood, Mr. R.G. Symes.
October 1-3: Pembrokeshire Weekend, Miss E.J. Lenton.
October 24: River Trym Survey, Mr. M. Chapman.
November 21: Bourton Combe, Mr. G. Walker.
December 12: River Chew Survey, Miss E.J. Lenton.

The Section's general mammal recording scheme has continued. Special emphasis has been placed on dormice and otters, whilst individual members have continued to monitor the distribution of harvest mice in selected areas.

Mr. R.G. Symes, Mammal Recorder since 1968, left Bristol at the end of 1976 on being promoted Regional Pest Officer for North-East England. The Section would like to put on record its appreciation of his work over the last 9 years.

R.A. BURBERRY, *Hon. Secretary*

REPORT OF GEOLOGICAL SECTION, 1976

The Annual General Meeting of the Section was held on 15th January, 1976 in the Geology Lecture Theatre of the University. The following officers were elected:- President: Mr. N. Hollingsworth; Vice President: Mr. T. Harrison; Secretary: Miss C.J. Mayle; Field Secretary: Mr. D. Hamilton; Ex Officio: Professor D.L. Dineley, President of the Student Geology Society; Members: Mrs. Hamilton, Miss Pounder, Mr. Thompson, Mr. Dennison, Mr. Frey, Dr. A.B. Hawkins.

The programme included:-

January 15: Man and the Evolutionary Pyramid. Mr. T. Harrison.
February 19: 'Potato Stones'. Professor Wilson Baker.
March 18: The Gregory Rift. Dr. R. Savage.
October 21: Karst Topography. Dr. H.A.O. Osmaston.
November 18: The Pennant Sandstone. Professor G. Kelling.

The following field trips took place:-

April 25: The structure and sedimentology of the Upper Palaezoic rocks of Portishead. Messrs. R. Lovell and R. Nickolls.
May 23: The drainage pattern of the Mendips. Mr. A.E. Frey.
June 13: The Forest of Dean. Dr. R. Bradshaw.
July 25: Fyfield Down Land Form Trail. Miss E. Pounder.
September 19: Geology and slopes of the Bath Area. Dr. A.B. Hawkins.

C.J. MAYLE, *Hon. Secretary*

REPORT OF ENTOMOLOGICAL SECTION, 1976

Mr. G. Best retired as Secretary, and the President acted as Secretary. Mr. A.N. Grose retired as Butterfly Recorder due to ill health and our thanks go to him for the many hours he has spent on this during the last few years. Mr. K.H. Poole continues as Moth Recorder.

Field meetings were as follows:-

June 5: Worlebury Hill.
June 27: Michael Wood.
July 25: Brockley Combe.
October 12: Entomology Exhibition, London.

Indoor meeting:

January 6: Annual General Meeting.

B.S. HARPER

ACCOUNT OF GENERAL MEETINGS, 1976

The first meeting of the year was on January 22nd and our President, Dr. H. Peregrine, spoke on "The National Parks of America".

February 5: "The Severn Barrage - its implications" by Dr. T. Shaw.

March 4: "Caves in Breconshire" by Mr. E.J. Mason.

October 7: "The History of Sedgemoor" by Mr. B. Storer.

November 4: "The Natural World of the Chinese" by Dr. N.A. Morgan.

December 9: "Members Evening". Short accounts by members on the topic of "islands".

AUDREY HECKELS, *Hon. Secretary*

GENERAL FIELD MEETINGS, 1976

Thirteen field meetings were held, and with one exception were well attended. In addition to the ordinary meetings, three midweek rambles were held. A list of the meetings with leaders and an indication of the things seen is given below. A fuller account is kept in the records of the Field Committee. In the following list the leader is given first followed by the area visited.

January 19: Miss R.C. Lee. Brean Down. Birds, particularly shore birds. Exotic birds were also seen in the bird garden by the car park.

February 28: R. Curber. South Cerney Lakes. An extensive area of flooded gravel pits. Birds, particularly waterfowl.

April 18: H.G. Hockey. Clatworthy reservoir, Brendon Hills. Waterfowl, migrant birds, and amphibians.

May 16: H.G. Hockey. Llyn Clywedog Reservoir, Montgomeryshire. The party walked round the nature trail, where some woodland birds were seen, and visited an old lead mine.

May 26: H.G. Hockey. Bowood, Calne. Trees, including exotic ones, rhododendrons, and a collection of pheasants.

June 9: Miss E. Harris and Mrs. D. Kenney. An evening walk from Ozleworth to Wotton-under-Edge. Plants and an unusual church at Ozleworth.

June 12: Miss R.C. Lee. Bredon Hill. A walk from Overbury to Bredon Tower and Elmley Castle. Birds, plants and geology.

June 15: A.F. Devonshire. Flax Bourton Combe. Plants of woodland and limestone grassland.

June 26: Miss C. Groves. Portland Bill and Cricket St. Thomas. Portland Bill for the bird observatory, and Cricket St. Thomas for the wildlife park.

July 6: Miss R.C. Lee. Berkeley Deer Park. Deer and trees.

July 8: Miss C. Goves. The Downs at Portway. Plants and geology.

July 24: A.F. Devonshire. Symonds Yat and Tintern. At Symonds Yat the party walked through the woods and back along the river. Trees, plants and remains of iron workings.

August 11: Miss E.J. Vinnicombe. Bracken Hill Garden and Nightingale Valley.

August 21: R. Curber. Stanpit marshes, near Christchurch. Shore birds, a hooded crow and plants.

September 5: Miss E.J. Vinnicombe. Mythe Nature Reserve and Hidcote. Mythe Reserve is an old railway track. Hidcote Manor has a fine garden.

October 23: Miss R.C. Lee and Miss J. Cox. The Wye and the Angiddy (which join at Tintern). Autumn colouring, trees and industrial archaeology.

A.F. DEVONSHIRE, *Hon. Field Secretary*

REPORT OF THE LIBRARIAN, 1976

Increasing concern was felt over continued abuse of the Society's library. After much discussion it was agreed to close the library at the end of July and to recall all books. At the beginning of November, the library was reopened, under new regulations, on Wednesdays (1.15 p.m. to 1.45 p.m.) and on Saturdays (10 a.m. to 12 noon) for a trial period, with members of the Library Committee on duty.

The library was visited on over 200 occasions, in spite of the closed period and the reduced opening hours. A total of 326 items were borrowed by 73 different members.

Working evenings continued. About 65 volumes were sent to the binders. Over 25 new books were purchased as well as many replacement journal issues. The Society is very grateful to all who have donated items, particularly to Miss M. Bowen who gave 20 books. The late W.F. Vernon bequeathed some 60 books to the Society. His maps and notebooks were passed on to the Geology Department of the University and City Museum.

We have also to thank the Director of the City Museum, Bristol, and the Librarian of the University of Bristol, for providing us with accommodation.

JENNIFER SCHERR, *Hon. Librarian*

Accounts for the year ended 31 December 1976

1975 £		£	£
	Members' Subscriptions		
1,127	Full Members	1,439.58	
100	Full Members of the same household	117.75	
26	Corresponding Members	34.50	
23	Associates	17.50	
29	Juniors	24.75	
25	Affiliated Societies	23.25	
			1,657.33
1,330			
1	Donations		.50
104	Proceedings		
	Grants	35.00	
	Offprints	39.00	
	Sales	14.89	
			88.89
1,067	Sale of journals and books		1.30
17	Field Committee: profit		-
1	Sale of badges		9.20
9	Profit on Buffet Supper		-
67	Interest on deposit account		130.98
2	Interest from National Savings Bank		1.68
28	Interest on Bonds		33.00
9	Members contributions to the Harry Savory Illustrations Fund		11.30
	Steep Holm Trust, refund of past contributions		18.00
	City of Bristol donation re Frome Valley Nature Trail		25.00
1,327	Balance from last account		2,583.95
£3,962			£4,561.13

1975		£	£
323	General Printing and Stationery	309.88	
368	Postages and telephone	442.17	
			752.05
30	Proceedings (1974, part 1975)		657.50
41	Books	305.86	
76	Subscriptions for journals etc.	114.30	
14	Replacement of lost journals	59.63	
421	Binding	-	
8	Fire insurance (library)	12.57	
			492.36
16	Contributions to Council for Nature, S.W.N.U. etc.		16.40
1	Fares and expenses of general meetings		5.00
	Field Committee: loss		25.75
	Buffet Supper: loss		2.65
80	Grants to Sections:		
	Botanical	8.00	
	Mammal	30.00	
	Ornithological	40.00	
	Geological	10.00	
	Junior	15.00	
			103.00
	Balances to next account:		
276	Cash in bank, current account	90.04	
1,781	Cash in bank, deposit account	1,911.45	
42	Deposit in National Savings Bank	43.98	
400	* £400 7% and 9½% British Savings Bonds	400.00	
85	In hands of Field Committee	59.45	
	In hands of Hon. Treasurer	1.50	
			2,506.42
£3,962			£4,561.13

* Including the Harry Savory Illustrations Fund £99.65

Notes (1) These accounts do not record balances held by sectional treasurers and the Ornithological Section Special Fund of £125.68
(2) Outstanding liabilities and commitments include £428 for book binding and estimated cost of the 1975 Proceedings amounting to £650

P. J. M. Nethercott
Hon. Treasurer
17 January, 1977

I have examined the books and records of the Society and found them in agreement with the foregoing Account

T. B. Silcocks
Hon. Auditor
30th January 1977

BRISTOL BOTANY IN 1976

BY A.J. WILLIS

(Department of Botany, University of Sheffield)

The year 1976 was one of extremes as regards weather. On average it was sunny, hot and dry, but there was a cold and very wet end to the year after an exceptionally hot, sunny and exceedingly dry summer. Indeed it was the driest, warmest and sunniest summer this century, and water levels were critically low until the rains of September.

Total rainfall for the year was 765.4 mm at Long Ashton Research Station, a value of 83% of the average. The year started very dry, only March during the period from January to August having above average rainfall. From April to August only 138.0 mm of rain fell, much less than half of the average rainfall for this period. However the two months September and October were very wet (together totalling 297.9 mm of rain), having more rain than the total of the previous eight months of the year. Temperatures were fairly mild in January, but there was a cold March. The very warm, sunny spell started in May, temperatures in June, July and August averaging more than 2°C higher than normal, a highest maximum temperature of 33.5°C (92.3°F) being recorded in July. The year ended with very cold weather in December, after near average temperatures in the autumn.

The very dry period lasting until the end of August had a pronounced effect upon the vegetation of the Bristol region, especially as the year 1975 was also a distinctly dry one. The grassed areas of Durdham Down, Bristol, and elsewhere were almost completely brown, but became green again in September when the drought was broken. In early August some of the plants on St. Vincent's Rocks in the Avon Gorge were severely affected: *Veronica spicata* L. was badly wilted and flowering imperfectly, and later shrubs on the cliffs such as privet and hawthorn were very brown (*P.J.M.N.*). In contrast *Allium sphaerocephalon* L. flowered early and abundantly in the Gorge (*A.L.G.*). Also *Potentilla tabernaemontani* Aschers. in old turf at St. Mary's Churchyard, and along the dry stony road verge nearby in Leigh Woods, was unaffected when the other vegetation was completely dead. However, the flowering of *Spiranthes spiralis* (L.) Chevall. failed completely in this area (*C.G. Trapnell*). Another manifestation of the extreme weather of 1976 may be the fruiting of *Euonymus japonicus* L.f.; this garden shrub rarely fruits, but fruits were seen several times in the Bristol area during the winter (*A.L.G.*).

The unusual orchid described and illustrated from Leigh Woods in *Bristol Botany in 1968* has now been determined as *Ophrys* x *pietzschii* Kümpel, derived from the crossing of the Bee and Fly Orchids. The plant persists in a quarry in Leigh Woods, the only known station for this hybrid which is a very notable addition to the British Flora. The discovery of the plant in 1968 is believed to represent the first record of this taxon as a naturally occurring hybrid.

As in previous years, many welcome records have been made of the persistence of uncommon plants in localities reported previously. The minute *Wolffia arrhiza* (L.) Hork. ex Wimm. is still quite well represented in rhines in low-lying sites near the coast in the Burnham area northwards. *Ranunculus lingua* L. and *Schoenus nigricans* L. have been refound at Churchill, *Ceratophyllum submersum* L. at Brent Knoll, *Alisma lanceolatum* With. at Berrow, and *Agropyron* x *obtusiusculum* Lange in the Avon Gorge. Details of these and of other persisting plants are listed later in this article. *Thlaspi alpestre* L., *Cochlearia danica* L., *Galanthus nivalis* L., *Narcissus pseudonarcissus* L. and *Limonium binervosum* (G.E.Sm.) C.E. Salmon still grow in many of the sites listed by J.W. White (*Flora of Bristol*, 1912) and the Rock Sea Lavender is now plentiful on the edge of the salt marsh at Berrow (*R.S.C.*). A notable record is *Polygonum raii* Bab. from Stert Island; also present are *Lepidium ruderale* L. and *Limonium vulgare* Mill., while *Artemisia maritima* L. and *Elymus arenarius* L. persist (*R.S.C.*).

An interesting item in the history of Bristol Botany came to light in the course of the year. In the 1850's and early 1860's Miss Martha Maria Atwood (c. 1810-1880) was a very active field botanist in the Bristol area. She was especially interested in Cryptogams, notably bryophytes and lichens, and she contributed to Leighton's *Lichen Flora of Great Britain*. She also contributed to Swete's *Flora Bristoliensis* (1854) and vouched for many of the grasses, including *Agropyron* x *obtusiusculum* Lange (see the entry later in this article). Unfortunately hardly any personal particulars are available about Miss Atwood. However a small photograph of her, sitting at her microscope, has been found in a book belonging to our member Miss M. Bowen. She had obtained the book from Miss I.M. Roper who in turn had obtained the photograph from a nephew of Miss Atwood. A note by Miss Roper indicates that Miss Atwood once lived at Clifton Vale, but on leaving Bristol she and her two sisters lived at Worcester where she died. Some shells and mosses collected by her are in the Worcester Museum.

Names of contributors associated with several records are abbreviated thus:

J.A.,	Mrs. J. Appleyard	A.L.G.,	A.L. Grenfell
R.S.C.,	R.S. Cropper	P.J.M.N.,	P.J.M. Nethercott
C.H.C.,	C.H. Cummins	R.G.B.R.,	Capt. R.G.B. Roe, R.N.
I.F.G.,	Miss I.F. Gravestock		

G: Gloucestershire S: Somerset

Equisetum fluviatile L. Churchill, S, *R.S.C.*

Blechnum spicant (L.) Roth One plant on Shapwick Heath, S; also on Beacon Hill, S, and in Stoke Lane, Edford, S, *R.S.C.*

Asplenium marinum L. Sand Point, S, and persisting on the cliffs between Kewstoke and Birnbeck, S, *R.S.C.*

Dryopteris carthusiana (Vill.) H.P. Fuchs Shipham Bottom, below Rowberrow, S, *R.S.C.*

Thelypteris limbosperma (All.) H.P. Fuchs A single clump, Priddy, S, and also still in several places on Blackdown, S, *R.S.C.*

Ophioglossum vulgatum L. Uphill, S, *R.S.C.*

Helleborus viridis L. Persistent near Cold Ashton, G, *R.S.C.*, and also in the Trym valley, G, *C.H.C.* Edge of wood between Upper Langford and Churchill, S, *R.S.C.* Persisting in good quantity in pasture between Failand House and the Clevedon road, S; also near Winterhead Farm on Mendip, S; and at Wellesley Farm near Wells, S, *R.S.C.*

Ranunculus lingua L. With *Menyanthes trifoliata* L. and *Carex acutiformis* Ehrh. in overgrown pool at Churchill, S, *R.S.C.* This locality for the Great Spearwort is no doubt the one rediscovered by White in 1910 (see White's *Flora of Bristol*, pp. 119-120); the very long persistence of this plant is of considerable interest.

Aquilegia vulgaris L. In wild spinney, Wansdyke, near Compton Dando, S, *I.F.G.*

Ceratophyllum submersum L. Fruiting, with *Ranunculus lingua* L., at Kenn, S; also abundant in a pool at Brent Knoll, S, *R.S.C.*, a locality from which Miss I.M. Roper recorded this Hornwort in 1915. The hot summer seemed to favour the fruiting of this rare plant.

Raphanus maritimus Sm. South of New Passage, G, *R.S.C.* In quantity at Clevedon, S, and on Stert Island, S; also present in Sand Bay, S, and still persisting at Burnham and on the Berrow dunes, S, *R.S.C.* This plant is now quite widely distributed along the Channel shore.

Lepidium heterophyllum Benth. A single prostrate plant (somewhat parched by the drought conditions) in a farm gateway, Ivory Hill, Kendleshire, G, *A.L.G.* The siliculae were smooth, and winged for nearly half of their length, with the style projecting about 1.5 mm beyond the apical notch. White (*Flora of Bristol*, pp. 161-2) refers to plants from Ivory Hill as having 'scaly pouches' and notes that 'fruit of our plants is minutely, but distinctly, scaly or papillose'. This Cress was apparently severely reduced at Ivory Hill some years ago as a result of road widening.

Teesdalia nudicaulis (L.) R. Br. One specimen, with several plants of *Arabidopsis thaliana* (L.) Heynh., Bury Hill, Winterbourne, G, *A.L.G.* *Teesdalia* was first seen in this site in 1971 (a few plants) and five or six specimens were present in 1973, but none in 1975. It has been reported from Gloucestershire previously from several localities, although there are no earlier records of its persistence in any site in the area.

Hornungia petraea (L.) Reichb. In small quantity on rocky outcrop north-west of King Down Farm, south of Charterhouse, S, *J.A.* The Rock Hutchinsia was first reported from the Charterhouse area in 1935 (see *Bristol Botany in 1936*), but the present record represents a new station for the plant. It may possibly have originated from an old quarry, now filled.

Viola hirta L. A form with white flowers and violet spur, near West Compton, S, *J.A.*

V. palustris L. Persisting on Shapwick Heath, S, and on Mendip at Priddy, on Blackdown, and at Beacon Hill, S, *R.S.C.*

Polygala calcarea F.W. Schultz Together with *Hippocrepis comosa* L. still at Fortnight, S, *R.G.B.R.* and *R.S.C.*

Hypericum montanum L. Sand Point, S, and Burrington Combe, S, *R.S.C.*

H. elodes L. Still persisting in a small boggy area at Mangotsfield, G, *A.L.G.* and *R.S.C.* Associated with the Marsh St John's Wort was *Scutellaria minor* Huds. (Lesser Skullcap) of which ten flowering spikes were seen; also present was *Carex echinata* Murr. *Hypericum elodes*, which has been lost from a number of localities in Britain as a result of drainage, was first recorded for the Mangotsfield site last century. Regrettably the plant has not been seen on the Somerset Levels for more than ten years.

Saponaria officinalis L. Old quarry, Vassall's Park, Fishponds, Bristol, G, *A.L.G.* Also on waste ground, Westbury-on-Trym, Bristol, G, *I.F.G.*

Cerastium arvense L. Still on Loxton Hill, S, *R.S.C.*

Stellaria pallida (Dumort.) Piré Observatory Hill, Clifton, Bristol, G, *R.S.C.*

Minuartia verna (L.) Hiern With abundant *Carex montana* L. about a mile south-east of King Down Farm, south of Charterhouse, S, *J.A.* Both the Vernal Sandwort and the Mountain Sedge are Mendip rarities.

Chenopodium polyspermum L. Westhay Moor, S, *R.S.C.*

Atriplex littoralis L. In good quantity on Stert Island, S, and also a single plant on the Berrow dunes, S, *R.S.C.*

A. laciniata L. Two plants at Uphill, S; also persisting in small quantity on Stert Island and the Berrow dunes, S, *R.S.C.*

Halimione portulacoides (L.) Aellen Still thriving and flowering well on the Avon at Shirehampton, G, *R.S.C.* The continued existence of this plant in this locality is of note; it was recorded for Shirehampton in *Bristol Botany in 1928*. The Sea Purslane also persists on Stert Island and near Burnham, where there is a good patch on the River Brue, S, *R.S.C.*

Salsola kali L. Stert Island, S, *R.S.C.*

Malva moschata L. A white-flowered form, roadside, Iron Acton by-pass, G, *A.L.G.*

Lavatera arborea L. Highbridge, S; also one plant on Stert Island, S, *R.S.C.*

Linum bienne Mill. In good quantity on Worle Hill, S, *R.S.C.*

Erodium maritimum (L.) L'Hérit. Sand Point, S, and persistent on Brean Down, S, *R.S.C.*

Rhamnus catharticus L. Delhorn Lane, south-east of Lympsham, S, *J.A.* The Buckthorn is not common in the west of Somerset.

Medicago arabica (L.) Huds. Still present on Brandon Hill, Bristol, G, *R.S.C.* The Spotted Medick is listed as 'Rare' by White, but it appears to be now more frequent in North Somerset than formerly.

Trifolium ornithopodioides L. Persisting on Brandon Hill, Bristol, G, *R.S.C.* However, *T. striatum* L., *T. scabrum* L. and *T. subterraneum* L. seem to have disappeared from this site.

T. squamosum L. Sea bank in Woodspring Bay, near Wick St. Lawrence, S, *R.S.C.*

T. scabrum L. Together with *T. striatum* L. on Purn Hill, Bleadon, S, and on Worle Hill, S, *R.S.C.*

Astragalus glycyphyllos L. In some quantity on edge of wood adjoining the Henbury Golf Course, G, *C.H.C.* White (*Flora of Bristol*, p.243) notes the Milk-vetch at the edge of a wood on Henbury Hill.

Crataegus oxyacanthoides Thuill. A single tree at Charfield, G, and one in Westridge Wood, Wotton-under-Edge, G; also several at the northern border of Lower Woods, Wickwar, G, *R.S.C.*

Sorbus wilmottiana E.F. Warb. The tree on Clifton Down, G, from which the type was described, fruited abundantly and has made a very good recovery from the felling of 1969, *P.J.M.N.* It was noted in *Bristol Botany in 1969* (p.573) that the stump still showed signs of life; it is most fortunate that such vigorous new growth has been made.

Sedum forsteranum Sm. At foot of wall, Burwalls Road, Leigh Woods, S, *I.F.G.*

Peplis portula L. Beacon Hill, Mendip, S, *R.S.C.* Also on Beacon Hill were *Juncus squarrosus* L., *Carex binervis* Sm. and *C. echinata* Murr.

Daphne laureola L. Several plants, together with a fine display of *Ornithogalum pyrenaicum* L., in lane below Prospect Stile, Kelston, S, *A.L.G.*

Epilobium palustre L. Inlet on the east side of Chew Valley Lake, S, *J.A.*

Myriophyllum verticillatum L. Still on Weston Moor, Gordano valley, S, *R.S.C.*

Berula erecta (Huds.) Coville In stream, together with *Mimulus guttatus* DC., west of Chew Magna, S, *J.A.*

Crithmum maritimum L. In small quantity, flowering on the mobile dunes at Berrow, S, *R.S.C.*, a rather unusual habitat for the Rock Samphire.

Silaum silaus (L.) Schinz & Thell. Dam at Blagdon Lake, S, *I.F.G.*

Polygonum raii Bab. Stert Island, S, *R.S.C.* This plant has not been recorded from Berrow for many years.

Armeria maritima (Mill.) Willd. On the River Yeo, near Wick St. Lawrence, S, *R.S.C.*

Hottonia palustris L. The Water Violet has much increased in Nailsea Moor, S, *E.S. Smith*; *Hydrocharis morsus-ranae* L. is also showing some increase in this locality.

Lithospermum purpurocaeruleum L. Still at Brent Knoll, S, *R.S.C.*, in a site which fits the description of the old record in White's *Flora of Bristol* (p.436).

L. arvense L. Many plants in a cornfield near Upper Kilcott, G, *A.L.G.*

Hyoscyamus niger L. Abundant in two fields on Lye Hill near Compton Dando, S, *A.J. Pennington*. Still on the Berrow dunes, S, *R.S.C.*

Verbascum nigrum L. Rampant weed in nursery gardens on Bannerdown, Batheaston, S, *T. Cairns*.

V. virgatum Stokes Side of track, near Pilton, S, *J.A.*

Mentha longifolia (L.) Huds. Roadside near the Miners Arms, near Priddy, S, *J.A.* There are few records of this Mint from Mendip.

Stachys x *ambigua* Sm. By brook near Curl's Wood, south of Stanton Drew, S, *J.A.* (conf. *R.G.B.R.*).

Scutellaria galericulata L. Growing with *Lycopus europaeus* L. in the unusual habitat of the promenade wall, Portishead, S, *A.L.G.*

Rubia peregrina L. Still on Goram's Chair, Blaise Castle, G, *R.S.C.*

Filago germanica (L.) L. Several plants on a bare bank near the M4 motorway at Moorend, G, *A.L.G.* Also on Crook Peak, S, *R.S.C.* This Cudweed is much less common than it was formerly.

Eupatorium cannabinum L. A white-flowered form of Hemp Agrimony in the Avon Gorge under Sneyd Park, G, *P.J.M.N.*

Artemisia absinthium L. Several fine plants growing with *Chenopodium ficifolium* Sm. on tipped soil at the Bristol County Ground, G, *A.L.G.* Also at Lamplighters, Shirehampton, G, *I.F.G.*, and plentiful on waste ground between Shirehampton and Avonmouth, G, *R.S.C.*

Cirsium eriophorum (L.) Scop. A few plants on Coombe Hill, Wotton-under-Edge, G, *R.S.C.* Also on Brent Knoll, S, and Portishead Down, S, *R.S.C.*

Onopordum acanthium L. Several plants on the dunes at Berrow, S, *R.S.C.* There have been no records of the Scotch or Cotton Thistle from Berrow for many years.

Centaurea cyanus L. In cornfield, Codrington, G, *A.L.G.* The Cornflower is rare in the Bristol area.

Cichorium intybus L. Roadside verge, Hambrook, G, *A.L.G*; also roadside, Avonmouth, G, *R.S.C.* Abundant on waste ground at Burnham, S; scattered on roadside between Cross and Lower Weare, S, *R.S.C.*

Hieracium sublepistoides (Zahn) Druce In 1975, on face of old quarry in Murder Combe near Mells, S, *Dr. B.N.K. Davis*, det. *P.D. Sell.* A Hawkweed from a site nearer Mells found by C.A. Howe in 1968 was determined by P.D. Sell as '*H. exotericum* agg.' and may have been the same species.

H. diaphanum Fr. In 1975, on spoil heap of old quarry between Shipham and Cheddar, S, *Dr. B.N.K. Davis*, det. *P.D. Sell.* There are no previously confirmed records of this taxon from North Somerset.

Baldellia ranunculoides (L.) Parl. Still on Catcott Heath, S, and on Walton Moor, Gordano Valley, S, *R.S.C.*

Alisma lanceolatum With. Still at Berrow, S, *R.S.C.*, from which it was recorded in 1906 (see White *Flora of Bristol*, p.575).

Zannichellia palustris L. With *Potamogeton natans* L. and *Carex demissa* Hornem., at Shortwood, near Pucklechurch, G, *R.S.C.*

Convallaria majalis L. The Lily-of-the-Valley in fair quantity in one spot, Cheddar Wood, S, *R.S.C.*

Ruscus aculeatus L. Well established in hedge bordering a cottage garden, Kelston, S, *A.L.G.*

Ornithogalum umbellatum L. Many plants of the Star-of-Bethlehem under hedge, near Wall Mead, north of Timsbury, S, *J.A.*

Epipactis leptochila (Godfery) Godfery A further colony of this orchid was found in 1975 in the Cheddar Gorge, near Black Rock, S, *R.S.C.* Previous finds were reported in *Bristol Botany in 1974.*

Ophrys x *pietzschii* Kümpel (*O. apifera* Huds. x *O. insectifera* L.) In *Bristol Botany in 1968* a description and photographs were given of an orchid with unusual flower structure from Leigh Woods, S, which was referred to the Fly Orchid (*O. muscifera* Huds. = *O. insectifera* L.). This orchid was subsequently found in the same locality and drawn in colour by Mrs. O. M. Stewart in 1974. In 1976 it was seen again by R. J. Pankhurst (in the company of J. M. Mullin) and identified as a hybrid of the Bee and Fly Orchids. This determination has been confirmed by P. F. Hunt and also by J. J. Wood and others at Kew, and an exhibit relating to this hybrid was set up by R. J. Pankhurst at the B.S.B.I. Exhibition Meeting in London in November 1976. This hybrid was first described in 1971 by H. Kümpel, based on the results of an artificial cross-pollination in the wild in East Germany. The hybrid represents a first British record, and the Leigh Woods plant may be the first natural hybrid recognized. It may be noted that in

1968, when its possible hybrid origin was considered, the results of artificial cross-pollination were not available. It is planned to publish a full account of this hybrid elsewhere.

O. sphegodes Mill. The Early Spider Orchid flowered again in 1976 in the site from which it was reported in *Bristol Botany in 1975*, near Dursley, G, *Mrs. N.J. Gibbs*. The determination was confirmed on site by Dr. P. Cribb and J. J. Wood from Kew. Reference was made in *Nature*, Sept. 1976, Vol.263, p.186, to the occurrence of this orchid in Gloucestershire, but the statement that the discovery was made in 1976, and the implication that the flowering may be attributable to the warm dry spring, are misleading.

Wolffia arrhiza (L.) Hork. ex Wimm. With *Lemna polyrhiza* L., *L. minor* L., *L. gibba* L. and *Azolla filiculoides* Lam., in rhine near Yatton, S; also still in old peat cutting near Westhay, S, *Miss E.J. Lenton*. Persisting in some quantity in 1973 with other duckweeds, in rhines at Kingston Seymour, S, *P.J.M.N.* Still in the Burnham area; seen in 1975 in marshland between Burnham and Brent Knoll, and in another site nearer Burnham, S, *R.S.C.*

Typha latifolia L. Shortwood, near Pucklechurch, G, *R.S.C.* Also at Publow, S, *R.S.C.*

Scirpus maritimus L. On the west side of Chew Valley Lake, S, *J.A.* The occurrence of the Sea Club-rush in Blagdon Lake, another locality well inland, was reported in the *Journal of Botany*, 1930, p.47.

Cyperus fuscus L. One flowering plant in 1975 on Walton Moor near the junction with Weston Moor, Gordano Valley, S, *R.S.C.* No specimens could be found in this new locality for the plant in 1976, although it was evident in its previously known station on Walton Moor.

Schoenus nigricans L. In good quantity near Churchill, S, *R.S.C.* The last record of this plant from near Churchill was made by Miss I.M. Roper as long ago as 1919 (see *Bristol Botany in 1919*).

Rhynchospora alba (L.) Vahl On Street Heath, S, and also persisting in small quantity on Shapwick Heath, S, *R.S.C.*

Cladium mariscus (L.) Pohl Persisting on Shapwick Heath, S, *R.S.C.*

Carex strigosa Huds. Plentiful in Lower Woods, Wickwar, G; in small quantity in Midger Wood, G; at Yate Rocks, G, and Tortworth Park, G, *R.S.C.* Also in a ditch at Churchill, S, *R.S.C.*

C. pilulifera L. Rodway Hill, Mangotsfield, G, *R.S.C.*

C. muricata L. Priddy, S, *R.S.C.* (conf. *R.G.B.R.*).

Catapodium marinum (L.) C.E. Hubbard Persistent at Severn Beach and New Passage, G, *R.S.C.* Also present at Sand Point, S, and plentiful on the Huntspill Wall, S, *R.S.C.*

Poa nemoralis L. Lane on outskirts of Timsbury, S, *J.A.*

Bromus madritensis L. Stert Island, S, *R.S.C.* This grass still persists in two sites on the Leigh Woods side of the Avon Gorge, S, *P.J.M.N.* It is less rare on the Gloucestershire side of the Gorge.

Agropyron x *obtusiusculum* Lange (*A. acutum* auct.) On the muddy bank of the Avon, below Leigh Woods, S, *Mrs. O.M. Stewart* (conf. *Dr. C.E. Hubbard*). There seems to be no report of this hybrid grass from the Avon Gorge since the records of Miss Atwood for banks of the Avon under Cook's Folly, and from Rownham Ferry. These records are given in E.H. Swete's *Flora Bristoliensis* (1854, p.94) and are repeated in J.W. White's *Flora of Bristol* (1912, p.672), who notes that the plant 'cannot now be found'.

Calamagrostis epigejos (L.) Roth Brean Down, S; Shute Shelve Hill, S; Rowberrow Warren, S; and a large colony on Beacon Hill, S, *R.S.C.* Compton Hill, Winscombe, S, *P.J.M.N.* Also King's Wood, near Cleeve, S, *J.A.*

Alopecurus bulbosus Gouan Plentiful at New Passage, G, *R.S.C.* On the River Axe near Brean, S; and still near Burnham, S, *R.S.C.*

ALIENS. Azolla filiculoides Lam. In pond near Uphill, S, *Miss E.J. Lenton.* In 1974 and 1975 at West Huntspill and also further east in Chilton Moor, S, *R.S.C.*

Rorippa austriaca (Crantz) Bess. Waste ground off Long Cross, Lawrence Weston, G, *I.F.G.* (conf. *A.J. Willis*).

Sisymbrium orientale L. On rubbish tip, Cradle Bridge, north of Street, S, *J.A.*

Amaranthus retroflexus L. One plant on motorway verge, Moorend, G, *A.L.G.* (conf. *C.W. Bannister*). Also at least forty plants in 1975 neighbouring the road to Aust village from the M4 motorway, G, *Mrs. J. Swanborough, Mrs. M.J. Allen* and *G. Kay.* A short account of the occurrence of Amaranths in the Bristol and Gloucestershire area is given by C.W. Bannister and Mrs. S.C. Holland in the January 1977 issue of the Journal of the Gloucestershire Naturalists' Society, pp. 317-8.

Vitis vinifera L. On old shed near disused mine south of Timsbury, S, *J.A.*

Galega officinalis L. Tip at Moorend, G, *A.L.G.*

Malus sylvestris Mill. ssp. *mitis* (Wallr.) Mansf. A very old tree with medium sized golden fruit, Fry's Bottom Wood, Clutton, S, *I.F.G.* (with *Mrs. M.A. Silcocks*). Also in this wood is *Ribes uva-crispa* L.

Sedum spurium Bieb. Roadside wall near Newton St. Loe, S, *I.F.G.*

Oenothera erythrosepala Borbás Waste ground, Hambrook, G, *A.L.G.* Nearby was *Polygonum baldschuanicum* Regel in profusion.

Smyrnium olusatrum L. Brandon Hill, Bristol, G, *R.S.C.*

Euphorbia uralensis Fisch. ex Link Near the Railway Station, Weston-super-Mare, S; also along the old railway line near Cheddar, S, *R.S.C.*

Cannabis sativa L. One plant on a demolition site, Lawrence Hill, Bristol, G, *A.L.G.*

Pulmonaria officinalis L. Roadside, Kings Weston Road, G, *I.F.G.*

Datura stramonium L. One plant in garden, Winterbourne Down, G, *A.L.G.* Also about eight plants in garden of derelict cottage, Shapwick, S, *A.L.G.* and *R.S.C.*

Verbascum blattaria L. A fine, much branched, white-flowered specimen on tip, Moorend, G, *A.L.G.* Also on the Berrow dunes, S, *R.S.C.*

Cymbalaria muralis Gaertn., Mey. & Scherb. White-flowered forms: Small Street, Bristol, G, *P.J.M.N.*; also near St. Monica's Home, Stoke Bishop, Bristol, G; and still at Pitch and Pay Lane, Stoke Bishop, Bristol, G, *C.H.C.* Also on wall near Charterhouse, S, *J.A.*

Scrophularia auriculata L. In 1975, two plants growing on a brick wall of a garden, Fishponds, Bristol, G, *A.L.G.*, det. at British Museum.

Leycesteria formosa Wall. Flowering and fruiting on coal tip, Farrington Gurney, S, *I.F.G.* (with *Mrs. M.A. Silcocks*).

Galinsoga ciliata (Raf.) Blake A garden weed, Downend, G, *A.L.G.* Also between paving stones, Keynsham Park, S, *A.L.G.*

Senecio fluviatilis Wallr. Ditch near Coxley, S, *J.A.* This report confirms an old record for 'between Wells and Glastonbury' (White *Flora of Bristol*, p.382).

Conyza canadensis (L.) Cronq. Brandon Hill, Bristol, G, and plentiful on waste ground between Shirehampton and Avonmouth, G, *R.S.C.*

Elodea canadensis Michx. Small lake west of Chew Magna, S, *J.A.*

Allium carinatum L. This well-established alien has spread from its sites in and near the Avon Gorge, Gloucestershire side, into grassy areas on Durdham Down as far as Upper Belgrave Road, G, *P.J.M.N.*

Cynosurus echinatus L. Waste ground, Lower Swainswick, Bath, S, *T. Cairns.* There are very few records for this grass in North Somerset.

Avena ludoviciana Durieu In 1962 at Haycombe, near the Bath Crematorium, and in 1963 at Weston, Bath, S, *R.G.B.R.* This casual, which appears from time to time by roadsides, may have been overlooked in the past. There appear to be no reports of this plant from cereal crops in the Bristol area.

Cynodon dactylon (L.) Pers. A large patch on road embankment near the railway station, Weston-super-Mare, S, *R.H.W. Walters* (per *R.G.B.R.* who confirms this record). This grass was previously known from Bath and from Burnham, but there are no records from these localities for more than thirty years, so that Weston-super-Mare may be the only present station for the plant in the Somerset area.

BRYOPHYTES: MOSSES. *Epipterygium tozeri* (Grev.) Lindb. At the top of a stream in Hope Wood, west of Ebbor Gorge, S, *J.A.*

Hygrohypnum luridum (Hedw.) Jenn. With *Epipterygium tozeri* at the top of a stream, Hope Wood, west of Ebbor Gorge, S, *J.A.*

Acrocladium stramineum (Brid.) Rich. & Wall. Street Heath, S, *J.A.* There are only three other stations for this moss in North Somerset (see J. Appleyard, A Bryophyte Flora of North Somerset, *Trans. Br. bryol. Soc.*, 1970, Vol.6, pp. 1-40).

I thank everyone who has supplied records and helped with these, especially Mrs. J. Appleyard, Miss I.F. Gravestock, Mrs. S.C. Holland, Mr. P.J.M. Nethercott and Captain R.G.B. Roe. I am indebted to Long Ashton Research Station for the supply of meteorological records.

Editorial Note

Owing to circumstances beyond our control during the final stages of production of this issue of the *Proceedings*, it has not been possible to produce a photographic plate.

The Publication Committee would welcome members' photographs for consideration as illustrations in future issues.

NOTE - The Bristol Naturalists' Society is a signatory to the Fair Copying Declaration, details of which may be obtained from the Royal Society, 6 Carlton House Terrace, London SW1Y 5AG.

AVON BIRD REPORT, 1976

COMPILED BY THE EDITORIAL COMMITTEE OF THE
B.N.S. ORNITHOLOGICAL SECTION

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THE YEAR

1976 opened with a continuation of the mild weather of late 1975, but with unusually severe gales in the south west and along the south coast. The first ornithological event of note was the ringing of a Little Bunting at Chew Valley Lake on Jan. 4, Avon's first record of this eastern species. (Another was ringed at Nether Stowey on Feb. 19, the first for Somerset.) On Jan. 17 came an Avon first record from the New World, when a Killdeer Plover was seen at Chew - the only one reported in the country at the time, though in March one reached the Scillies and another the north-east. During the third week, Brambling numbers built up on the coast and flocks of up to 2,000 were present in several places until late February. In the last week of January, strong N.E. winds brought a cold spell, with snow on high ground in the S.W. Hen Harriers seen on the 31st and on Feb. 1 in different places were, like a third on March 7, male birds; of thirteen earlier records in the 1960's and 70's, only two had been males and only two ('ringtails') outside the period late August to December.

Cold and mild spells alternated in February; the first days and the 14th-17th were especially cold. A Mediterranean Gull was seen at Chew Valley Lake on two dates, and two Red-breasted Mergansers, not often present, were there on March 5th. An anticyclone developed in early March, giving quiet conditions with frosty nights. The weather remained generally cold, with snow flurries, until the 24th, when the winds became westerly, with rising temperature and rain, and a flood of migrants arrived. A Wood Sandpiper at Chew on April 1st was the earliest ever recorded in the area, where the species is uncommon in spring. Both our previous April records were at Chew in the 1960's.

For much of April, pressure was high to the south and low to the north of Britain; conditions were rather cool, with light N.E. winds. Apart from an unusually warm break from the 16th-19th this weather lasted through the first week of May, with some night frosts. Common/Artic Terns were plentiful on passage in late April and May. From January into May, Long-eared Owls were reported in the area, following an invasion of the species from the continent in autumn 1975. Several died, but some apparently prospered. In May, also, two Short-eared Owls appeared at Chew Valley Lake, and one was ringed. At the New Grounds, Glos., a Broad-billed Sandpiper appeared on May 6 and stayed for some three weeks.

Very warm weather from May 6-10 was followed by westerlies, with strong winds from the 15th-17th, during which an Avocet was seen at the Yeo Estuary. Early Sheld broods also appeared there on the 16th and 18th (the first are usually seen at the end of May). On the 28th a Temminck's Stint visited Cheddar Reservoir, Somerset, one of several rarities to be recorded there in 1976.

With pressure generally high over Europe, the weather was quiet but rather chilly until early June. The Avocet was seen again on June 6 (or perhaps another - on the 8th four appeared in Kent and one at a Leicestershire reservoir). Winds became southerly from around June 7, and hot, dry conditions developed. A Long-tailed Skua at Chew on June 19 was our first since 1971, when one was seen off Brean

Down, on the present Avon-Somerset boundary. (The only previous records for the Avon county area were in 1891, 1903 and 1912.) The hot weather continued, and a spell from June 23 to July 7 is thought to be without any precedent during the last 250 years; certainly there has been nothing comparable since the mid-19th century (Ratcliffe, R.A.S., *Weather* 31, 355-357). The summer of 1975 had been hot and dry, and the intervening winter was dry too, so that reservoirs had already been depleted. Water levels fell even further during 1976, and this had a marked effect on bird life. Few Little Grebe broods were seen - only two at Chew compared with 15 in 1975 - and in the whole county only one pair of Great Crested Grebes bred. The county total of Mallard broods was only two-thirds of the 1975 figure, and at Chew there were three broods of Tufted Duck, eleven of Gadwall, none of Ruddy Duck and only four of Moorhen, against 19, 21, three and at least 18 respectively the previous year. The dry conditions apparently suited Lapwings.

Noteworthy occurrences in July included a Glaucous Gull and a Great Skua at Sand Point, and a Spoonbill at Chew. At Frampton Pools, Glos., a Caspian Tern was seen on the 9th. August produced many interesting records in and near Avon. On the 1st, three very early Golden Plover were seen near the Yeo Estuary. At Cheddar Reservoir, Somerset's first White-rumped Sandpiper was present from the 9th-16th, and a record count of 15 Little Ringed Plover on the 10th. Two Aquatic Warblers were ringed - one at Littleton on Severn on the 14th and one at Chew on the 16th; (there were also fourteen records in Somerset during August and early September, mostly in the Bridgwater Bay area). On the 16th a Roller at Kenn Moor was the third new species for Avon in 1976. On the 23rd an immature male Goshawk was seen over Clifton, Bristol, and perhaps the same one was present at

Steart, Somerset, on the 30th. Cheddar Reservoir held a Buff-breasted Sandpiper from the 20th-31st, one of ten seen in England between June and October.

In the period June to August, the rainfall recorded at Long Ashton was 79.4mm, only 34% of normal, and most of that fell in the last few days, when thunderstorms heralded the end of the dought.

Single Wrynecks on autumn passage were seen at four places in Avon between Aug. 29 and Sept. 8, more than in any year since 1969; between Aug. 18 and Sept. 27, others were noted at fifteen Somerset localities, including Cheddar Reservoir (Aug. 22-28), Rodney Stoke (Sept. 1) and Brean Down (Sept. 19-22). The autumn passage of Black Terns brought substantial numbers at Chew; there were few reports of large numbers elsewhere in the country. On Sept. 2, a Wilson's Phalarope was present at Frampton Pools, Glos.

From Sept. 8 a wet, stormy week with strong S.W. winds marked the end of the long period of weather dominated by anticyclones. After a short break, warm and humid air from the S.W. brought more heavy rain. An Osprey visited Chew Valley Lake for three weeks from Sept. 23, and a Buff-breasted Sandpiper was there from the 29th to Oct. 6; one had been at Cheddar Reservoir, Somerset, from Aug. 20-31, and eight others were seen in England between June and October. On Oct. 9, a Kentish Plover, the third for Avon, was in the Axe Estuary. The very unsettled weather persisted until early November, to be followed by a period of anticyclonic conditions with night frosts. On Nov. 4 a Red Kite was seen near Weston-s-Mare, and two or three Great Northern Divers were in the area during the month. In the last week, strong S.W. winds returned. December was a cold month in general; there was a very cold spell, with snow showers, over the Christmas period. An Avocet visited Chew Valley Lake on the 19th. The wildfowl population at the lake increased during the late autumn and reached over 9,000 at the end of the year, almost twice the previous maximum of 4,700 on Dec. 28, 1965

DUCK COUNTS We have discussed in previous years the problems of making realistic estimates of winter populations in the face of the known movements between waters and even within the larger waters, as well as the known fact that personal biases exist when large numbers are being counted. We continue to estimate area totals from the national Wildfowl Count data, since waters are then counted on the same day; but we contrast these, where relevant, with individual counts. In some cases we report different counts for a given water on the same day, not in the belief that one is right and another wrong, but to show the nature of the differences reported, whatever their cause.

RARE DUCKS AND GEESE Besides posing identification problems, the frequent escape of birds from aviaries and collections must cast doubt on the genuine wildness of almost any rarity seen. This was certainly the case for waterfowl in Avon in 1976. The following list of rare or uncommon species and of hybrid duck seen shows the scope of the problem. In particular, the Ring-necked Ducks in December could well have been wild, but their occurrence in a group, simultaneously with a Mandarin Duck, must suggest that they had come from some collection.

	Chew Valley Lake	Elsewhere	
Jan. 3-17	Pochard x Ferruginous	Jan.- March	Cape Teal, Bristol Bridge
10-17	Gadwall x Wigeon		
10	Ferruginous Duck		
April 3	Pochard x Ferruginous	April 6	Ruddy Shelduck, Bristol Bridge
		April 8	Ruddy Shelduck, Bathampton Weir
May 11	Greylag Geese (2)		
28	" " (4)		
July - Sep.	Barnacle Goose		
Aug. 2	Scaup (2 female type)	Aug.23	Red-breasted Goose, Steep Holm
Aug. 25 - Sep. 16	Barnacle Goose (2nd)		

	Chew Valley Lake		Elsewhere
		Aug. 29	Red-crested Pochard, Barrow Gurney resrs.
Sep. 25-27	Red-crested Pochard		
Oct. 9	" " " (3)	Oct. 9+	Red-crested Pochard, Backwell
10-17	" " " (pr)		
		Oct. 21	Scaup x Pochard (?) 2, Hoar Gout
Dec. 19	Mandarin Duck		
19-31	Ring-necked (immature)		
19-31	Ring-necked x Tufted		
29	Ring-necked (2 males)		
29	Pochard x Ferruginous		

GULLS Inland wintering, first noticed about 1900, was widespread and involved large numbers by 1950. B.T.O. Enquiries (the latest in 1973, reported by R.A.O. Hickling in *Bird Study* 24 (2), 1977, 79-88) showed a three-fold increase in twenty years. This may represent both a shift from the coast and a rise in total population. In Avon, the construction of Chew Valley Lake in the 1950's complicates the situation: the large roost there must have grown at the expense of others, and recent counts (TBS) suggest that the Axe Estuary roost has diminished.

Urban nesting, a newer phenomenon, also continues to spread. In Avon, numbers in Bristol continue to exceed greatly those in Bath. A B.T.O. study in 1976 (Monaghan and Coulson, *ibid.* 89-104) showed urban Herring Gull nests to be doubling every five years, in part by expansion of colonies and in part by spread to fresh towns. Lesser Black-back breeding is increasing even faster - doubling in three years - though totals remain far fewer than for Herring Gull, as the expansion started later and is still mainly in the Bristol Channel area; it was noted in S.Wales some years before the first Avon record (in Bristol in 1972).

HABITATS The attraction of even a small new water is shown by the newly-excavated flood-water reservoir, Bucklands Pool, between Nailsea and Backwell. From the end of excavation in March 1976, Black-headed Gulls fed regularly. When substantial amounts of water accumulated in late summer, small numbers of duck arrived and by the year-end Mallard, Shoveler, Tufted and Pochard had been noted, as well as single Teal, Pintail and Red-crested Pochard. A pair of Mute Swans was also in residence.

The systematic list which follows has been compiled from all the Avon observations sent to Bristol Naturalists' Society, Bristol Ornithological Club or Somerset Ornithological Society, as well as some from other sources. Contributors' names are given at the end, NA denotes the part of Avon formerly in Glos., and SA the remainder.

GREAT NORTHERN DIVER

SA An adult, still in almost full summer plumage, was seen at Chew Valley Lake on Nov. 3 (LCH, WHH) and on 7th (PJC) when the vertically striped patches on the sharply-defined black neck were clearly visible; also a heavily-oiled bird was reported on the 5th and 9th (AM). One in West Dock, St. George's Wharf, Nov. 21 (WGB).

GREAT CRESTED GREBE

NA One off Chittening, April 10 (RGT). No breeding records.

SA Numbers at reservoirs varied considerably, and there were more reports from elsewhere than usual. Peak reservoir counts were c.170 in May (155 at Chew Valley Lake on 9th) and c.500 in Sept. (473 at Chew on 11th). Only c.250 remained at year-end. On R. Avon, one at Bitton on Feb. 8 and one at Saltford on Aug. 18th. In Portbury Wharf area, single birds off coast occasionally, and up to five in

West Dock, mid-Feb. to early April. Two off Brean Down, April 10th to 11th, and three on May 7th. The only breeding record was of a pair with one chick at Hunstrete Lake from April to June.

LITTLE GREBE

NA Bred at Hoar Gout, Avonmouth (two pairs reared a total of eight young from three broods); breeding attempted at Tortworth Park Lake but no proof of success.

SA Bred successfully at Chew Valley and Litton reservoirs (3 & 2 broods), Hunstrete Lake, R. Avon at Bitton, and Portbury Wharf.

FULMAR

SA Reported off Brean Down and Sand Point, chiefly in period April 20 to June 12 (mostly single birds; max. of four on May 29); one or two also seen off same areas in January and August. One observed flying round Steep Holm on August 22nd.

MANX SHEARWATER

SA Numbers lower than for many years; 25 to north off Steep Holm on June 6; six reports off Brean Down or Sand Point, as follows:

Date	May 12	18	25	29	June 2	5
Number	65	3	37	13	31	5

GANNET

SA Sand Bay/Sand Point: single birds, Jan. 20 and 22nd, and one dead on 25th; three, May 12 and one, June 1st. One up-channel off Brean Down, May 6, one off Portishead on 4th and another, Oct. 7th.

CORMORANT

NA Nine at Oldbury-on-Severn on July 9, and four at Chittening on Aug. 5; several were seen over Bristol, including three over Clifton Down on Sept. 25 and three over Redland on 27th.

SA At least 22 and possibly 25 pairs bred on Steep Holm; some returned to roost there - 34 seen arriving after dark on Oct. 6th. At Chew Valley Lake, 89 were counted on Jan. 4th, and up to 71 roosted in February; one found dead on 14th had been ringed as a nestling on St. Margaret's I., Tenby, on June 27, 1971. Numbers fell to c.10 by May-June, then rose to 51 by September and 70 by the year-end. Elsewhere, the largest counts were 16 off Sand Point in October and thirteen at Blagdon reservoir in November.

SHAG

SA One watched feeding off Sand Point on May 23 (RA).

GREY HERON

Numerous records of feeding birds from all parts of the county.

SA Over 30 at Chew Valley Lake in January and February and up to 26, August to November, but max. 12 in December. Heronry count data incomplete; available counts of occupied nests are: Newton Park, 11 (+ 4 probables); Cleeve, 36; Portbury, 11; and Uphill, 18.

SPOONBILL

SA An adult bird was seen at Chew Valley Lake on July 28 (AM).

MALLARD

Fewer broods reported than in 1975: 44 (17 localities) cf. 63 (15). County total c.1,500 in January, with usual dispersal before April. Summer records incomplete, but 1,200 present at Chew Valley Lake for most of July-August (one count of 1,879); clearly substantial movements occurred, as county totals were 800 in September, 1,900 in October, 1,550 in November and 2,150 in December (National Wildfowl Counts).

TEAL

NA Counts included 250 at Northwick Warth in February, up to 175 in October and up to 100, November-December; also up to 30 at Hoar Gout, Avonmouth in January-February, 70 in March, 45 in early April and 50-60 in late December.

SA The maximum early in the year was some 800 in February. As in 1975 a pair summered at Chew Valley Lake, where eight adults were present in June. Numbers rose slowly from late July - 66 at Chew on 28th - until a sudden influx in mid-October; the area total was over 3,000 by mid-November, and 3,700 in mid-December. This was the largest total since records began in 1936: the previous maximum was 2,997 in January 1956 (*per* Wildfowl Trust).

GARGANEY

SA Single males noted at Chew Valley Lake on March 11, April 21 and from May 1 - 11; also at Woollard on April 1 and at Blagdon reservoir on 9th. One or two birds frequently reported from Chew Valley Lake, July 14 - September 19 (one report of two pairs). Single birds noted at Portbury Wharf on August 23 and September 19.

GADWALL

NA Tortworth Park Lake: up to ten in January and February and three on March 21. Hoar Gout, Avonmouth: a pair, January 31 and a male, February 14; a pair (the same?) visited Avonmouth Sewage Works on February 1. The only other record was of a pair at New Passage on May 9.

SA Area total c.60 to end of February, rising to 80-125 by end of April. Similar numbers, late August to mid-September, c.200 from mid-October to early November, but only 130-150 in December, though at Chew Valley Lake KEV counted 330 on December 29. Only 11 broods were noted at Chew, compared with 21 in 1975 and 20 in 1974.

WIGEON

NA Two at Chittening Warth, January 18-February 14, but 100 there on February 1. At Northwick Warth up to 20 in February and from September to November, and up to 50 in late November.

SA About 800 in area in January and 900 in mid-February (but a count of 1,120 from Chew Valley Lake on February 1) rising to 1500-1600 by 22nd; last birds seen on May 2 (no summer records). First autumn record on August 22; total of 92, October 16 (of which 51 at Blagdon) and a flock arriving at Chew next day raised the total there to 176. The area total was 200-300 in November and December, until a sharp increase at the cold year-end with 986 at Chew on December 28 (AM) and 1,540 on 29th (KEV).

PINTAIL

NA Two records: single males at Hoar Gout, Avonmouth on January 31 and at Northwick Warth on October 24.

SA Some 20 in the area, January and February, but only two noted in March and seven in April. One at Portbury Wharf, August 28-29. Up to seven at Chew Valley Lake in September, 35 on October 17 (when also 6 at Blagdon) and 40 on 31st (also 50 at Blagdon). The area total was generally some 135 in November, but 188 were counted at Chew Valley Lake on 23rd (AM). On December 15 the total was only 43, but there were 100 at Chew on the 26th and 60 still present on 29th.

SHOVELER

NA Up to five at Hoar Gout, Avonmouth in January, February, August and December. A pair, Tortworth Park Lake, February 15. Nine in the Northwick Warth area in the last week of the year.

SA Approximately 100 in the area, January and February and 140 in March. Up to 27 summered, but no evidence of breeding. At least 137 present on September 11 (but 250 at Chew Valley Lake on 28th - AM), some 215 in October and 100-115 for the rest of the year.

RED-CRESTED POCHARD

SA A male, Barrow Gurney reservoirs, August 29. From Chew Valley Lake came reports of a male on September 3 and from 25th to October 3; three (2 males) on October 9, a pair from 10th-17th and one male on November 5. A male visited the new Bucklands Pool, Backwell for nearly three months from October 9. See note in Foreword.

SCAUP

SA Female or immature birds were noted at Chew Valley Lake as follows: one, March 20-April 3; two, April 11-17, and one on 22nd; three, December 29-31. A male and three females were seen at Blagdon reservoir on March 28.

TUFTED DUCK

NA Up to 11 at Hoar Gout, Avonmouth, January to March and up to four from July to October (16 on October 16). Rather more at Tortworth Park lake, with peaks of 27 on February 29 and 28 on October 17. In Bristol, seven on St. George Park Lake in February and a pair in July; seven in City Docks on March 18 and one next day; two on Eastville Pake lake, December.

SA Wildfowl Count data show a slight rise from c.435 in January to 525 in March; a similar total in mid-April (none at Blagdon but 556 at Chew on 19th), but on 24th 700-745 were counted at Chew (TD, AM). Only three broods were reared at Chew and one at Litton Reservoir. Autumn totals were 275 in October, 600-615 in November and in December. Count of 790 at Chew on December 29 (KEV).

RING-NECKED DUCK

SA An immature male, seen and photographed at Chew Valley Lake on December 19, stayed to end of year. Two males were also present from December 29-31. A hybrid Tufted x Ring-necked Duck was also seen on the 19th, and it too stayed into 1977. These birds were likely to have been escapes: a Mandarin Duck also appeared at Chew on December 19 - see Foreword. Records accepted by *Brit. Birds* Rarities Committee.

POCHARD

NA At Tortworth Park Lake, up to 18 in January-February and two in October. Five at Littleton upon Severn, May 16. At Hoar Gout, up to three in January and February and one or two, late October.

SA Just over 400 in area in January, 125 in February and 115 in March. Up to 11 at Chew Valley Lake in May and 80 (mostly males) in June but no evidence of breeding. Some 400 there on August 9, but area totals only 245 on September 11 and October 16; then marked rise to 755 on November 13 and 860, December 11. Evidently large fluctuations, as 550 at Blagdon and 1,500 at Chew on November 28, and up to 2,350 at latter on December 26 (AM) and 2,810 on 29th (KEV). One on coast at Axe Estuary, December 12.

FERRUGINOUS DUCK

SA One, probably an immature male, was present at Chew Valley Lake from January 10-17 (AM, KEV *et al.*).

GOLDENEYE

NA Four flying N. off Severn Beach, January 31; one, Bitton, February 8; two females, Hoar Gout, February 22-March 6 and one on 13th.

SA The National Wildfowl Count data suggest reservoir totals of 26 in January and 38-39 in February and March, but AM and KEV reported over 50 at Chew Valley Lake on several dates, and 85 on March 20. On April 24, there were still 22 present, and five on May 5. The first autumn records were of one at Barrow Gurney and two at Blagdon reservoir on October 16. Area total 18 on November 13 and 26 on December 11; at Chew, 39 were counted on December 13 and on 29th.

LONG-TAILED DUCK

NA One, probably an immature male, New Passage, October 31 (NTL).

SA Of the three (2 immature males) present at Chew Valley Lake to December 14, 1975, only two were seen thereafter until January 11; up to three were then noted until February 22, and the two immature birds remained until April 24.

VELVET SCOTER

NA A pair close inshore off Chittening on October 31 (KAH, NTL) was the second record for NA (the first was a male off New Passage in March 1892) but the eleventh for the whole Avon County area.

COMMON SCOTER

NA A male was seen off Northwick Warth from August 12-17, and one (the same?) off Chittening Warth on September 26.

SA Three, Chew Valley Lake, April 14 and one, November 23. Off Brean Down and Sand Point, up to nine from April 20 to end of June, up to twelve, October-November and seven, December 9. Up to three between Yeo Estuary and Portishead in September and October, and nine October 31.

EIDER

SA Four were off Portishead from January 14-18, five a month later and then three (2 females) until March 13. This party spent the rest of the year, until at least November 10, off Sand Point except for a few days in early May when they were seen in Weston Bay. On May 9, three more females joined them, but had left by the 15th.

RUDDY DUCK

SA Reported only from Blagdon and Chew Valley reservoirs, although clearly there is much movement. At the former there were 125 on January 7, and 127 on February 8 (when six were counted at Chew) and on the 22nd (two at Chew). The flock dispersed over the next month (last seen; three, March 20) while numbers at Chew fluctuated with a peak of 45 on March 5. Thereafter at Chew there were 15 on April 1, four on May 2 and then ones and twos, and no proof of breeding. In autumn, numbers in area rose slowly to 88 on December 11 (47 of which were at Chew where 114 were reported next day).

RED-BREASTED MERGANSER

SA At Chew Valley Lake a pair on March 5 (WGB), and a female with Goosanders, on December 29 (PJC).

GOOSANDER

SA A male was reported flying over Stockwood, Bristol on January 2; a female was on the R.Avon at Saltford on February 7; and two flew down-channel off Portishead on February 22. There were two at Blagdon reservoir on February 8, and one there and three at Barrow Gurney reservoir on November 20. All other records came from Chew Valley Lake, where there were some 50 on February 14, various counts from 30-56 on the 21st and three counts of 34 or 35 on the 22nd; by March 13, there were only 15-19, and a female on April 25 was the last seen until autumn; one noted, November 1, a pair on 7th, five on the 13th and 17 on the 20th; 34 on December 12, then 37 on the 27th and 46 on the 29th.

SMEW

SA A 'redhead' was noted at Chew Valley Lake from January 1 (two on 14th) until April 11; seen also at Barrow-Gurney reservoir on January 31 and Litton reservoir on February 29; a male also at Chew, January 1-3, perhaps moved to Blagdon reservoir, as one was noted there on January 14 and on April 19 and 24th, then at Chew again on the 25th - the last record until a 'redhead' appeared there on October 31. This stayed until December 11; a male in eclipse was reported there from November 9-28, and a male (possibly the same bird) throughout December.

SHELDUCK

Precise assessment of Avon county totals is prevented by the movement of birds in the Weston Bay-Brean Down area.

NA Some 120-140 present to end of April, and 114 in May; about 53 ducklings reached the coast, probably seven or eight broods.

SA In study area (R.Avon to Birnbeck I.) some 350-420 were in evidence to end of March, reduced to c.200 by end of May. Ducklings reached the coast between mid-May and mid-July, the estimated total being 165 (about 23 broods). There were also broods of 14 at Weston Bay and ten at Chew Valley Lake. Autumn details are confused as some observers do not distinguish immature and adult birds. Outside the breeding season small numbers occurred at the reservoirs: up to five at Barrow Gurney; two at Blagdon and eight at Chew. In June one visited the lake at the new Wills factory, Hartcliffe, Bristol.

GREYLAG GOOSE

SA Two unringed birds noted at Chew Valley Lake on May 11 and four on May 28 (AM, KEV). Three there, December 22 (AHD, RCFH).

WHITE-FRONTED GOOSE

NA Four at Aust Warth, February 1; three at New Passage, October 31. Parties of five and eight geese near Severn Beach on November 14 and 20 were probably of this species. Eight flew over Chittening on November 23; and five flew S.W. and 11 to N.W. at Severn Beach on December 25.

SA Thirteen flew S.W. at Sand Bay, January 26. All other reports were in December: one to N., Sand Bay, on 5th; eight at Chew Valley Lake on the 19th and parties of thirteen flew S.W. over the Axe Estuary on the 29th and 31st.

BRENT GOOSE

SA Two at Portbury Wharf, January 7 (HRHL), and at Portishead on February 15 and April 20 (TBS). (Two, Cheddar reservoir, Somerset, January 5).

CANADA GOOSE

SA At Chew Valley Lake, 19 were present up to mid-March, then 14 until June, when 11 goslings and up to 34 adults were noted. Later monthly maxima there were 32 in July, 37 in August, 21 in September and October, 29 in November and 32 in December. Some birds moved between Chew and Blagdon reservoir. Nine flew over Queen Charlton on June 12, and one over Redcliffe, Bristol on October 15.

MUTE SWAN

NA The only breeding record was of a brood of four at St. George Park, Bristol. The largest herds were also in Bristol: 46 at Bristol Bridge on January 9 and 23 on the Feeder Canal on January 24.

SA Breeding records from Claverton (3 young), Chew Valley Lake (4 young), Chelvey (nest vandalised), Nailsea Moor (2 young), Portbury Wharf (4 young), Portishead Lake (8 young) and Locking (6 eggs, outcome unknown). The largest herds were at Chew Valley Lake, from 64 to 78, August to December, and Kenn Moor, 29 in March.

BEWICK'S SWAN

NA Northwick Warth: two, October 30; four, November 21; one, December 22.

SA Blagdon reservoir: up to 34, January to March 28; five, December 11. Chew Valley Lake: five, January 10; six arrived, October 30, and numbers rose to 72 by November 28 and 127 by December 29. Fifteen, Kenn Moor, late January; nine over Knowle, Bristol, November 8; four, St. George's Wharf, on 21st and one, Portishead, December 5.

BUZZARD

The wooded area east of Clevedon should be added to the area of distribution given in the last Report.

NA Breeding-season records suggest at least six pairs in the S. Cotswolds and the Hawkesbury Upton and Cromhall areas. The only other records were of single birds near Rudgeway in February, over Filton Golf Course in September and at Hallen in December.

SA Breeding-season records suggest some 13 pairs. Nest sites were discovered in two areas. A 1st-year bird found dead at Abbots Leigh and analysed by the RSPB had been poisoned by Mevinphos, a systemic short-life organophosphorus insecticide, safe if used correctly but deadly when concentrated - and presumably so used here on meat bait.

SPARROWHAWK

Breeding-season records from 32 localities (only nine of which were in NA); the species is certainly under-recorded in some areas. Breeding was proved in two localities, both in NA.

GOSHAWK

NA An immature bird flew directly overhead in full sunlight, Clifton, Bristol on August 23 (GS). Comprehensive details supplied included: broad wings, long relative to the round-ended tail; well-marked parallel barring on underwing; bulky body with heavy longitudinal streaking; conspicuous dark bars on tail; plumage strikingly golden brown above and paler buff below.

RED KITE

SA One flew along Brean Down towards Uphill on November 4, seen from above by HRHL who supplied full details including large size cf. mobbing Kestrel; deeply-forked tail and rump rust-red; primaries dark; remainder streaked rufous.

MARSH HARRIER

SA One at Axe Estuary, May 9 (BR). One at Chew Valley Lake, November 9 (AM). A male, Clevedon - R.Yeo, December 25 (SCF).

HEN HARRIER

SA Single adult male birds at Axe Estuary, January 31 (RA); Mendip Lodge, February 1 (VG); and Clevedon, March 7 (TBS).

OSPREY

SA One noted at Chew Valley Lake on various dates between September 23 and October 14 (DB, AM, RJP, BR).

HOBBY

NA One, Cromhall area, September 2 (JH) - the only record received.

SA Breeding season reports from four places, including Chew Valley Lake, suggested 3-4 pairs; no proof of breeding.

PEREGRINE

NA An immature bird, Chittening Wharf, January 3 (PJ, CJB).

SA One, St. George's Wharf, March 14 (WGB). Single males, Clevedon, January 18 (KLF); Weston-s-Mare, January 25, Sand Point, February 25 and Worlebury, May 26 (RA, TB). One, Uphill, June 17 (DL). Axe Estuary: adult female, January 31; adult male, October 30 (RA). Steep Holm: one often seen in autumn from August 26 with second on October 10 (AJP). Chew Valley Lake: one, February 5-21, several November dates, and December 6 and 26.

MERLIN

NA A female, Chittening, January 30 (PDB, IP) and March 14 (DFS); one Aust, November 4 (BL, HWN) and December 25 (RGT).

SA Single birds near Clevedon, April 18 (KLF) and October 26 (HRHL), in Sand Point area, January 14 (TB), October 24 (RA, JC) and 30 (RJP), and November 17 (RA); and at Chew Valley Lake on seven January dates (with possibly three birds involved), February 21 and November 6 (various observers). One, Steep Holm, October 8 (AJP) - 2nd island record (the first was in 1958).

LANNER

SA The bird seen at Chew Valley Lake in December, 1975 and considered to be an escape, was seen again, January 3-10 and March 25.

KESTREL

Widely reported; from breeding-season records it is estimated that at least 68-70 pairs nested in the area (some 30 in NA). Records within Bristol City indicated a maximum of 16 pairs, but nests located at only three sites - Temple Back (in a warehouse), Arno's Vale and on cliff in Avon Gorge.

RED-LEGGED PARTRIDGE

NA A pair at Wickwar Quarry, March 30; heard near Marshfield on July 22 - no other records.

SA Breeding-season records were received from Keynsham, Marksbury, Queen Charlton and Stockwood.

PARTRIDGE

SA Breeding-season reports from Chew Valley Lake and Publow; coveys seen at Marksbury, Stanton Prior and Newton St. Loe.

QUAIL

NA Up to five heard at Marshfield, July 14-22.

SA Single birds reported from Compton Dando, May 14 and 15, and from Stanton Prior on June 22nd.

WATER RAIL

NA Noted in winter, Wickham Glen, Bristol and Littleton Pits.

SA Winter records from Chew Valley Lake (six on December 29 - KEV); one ringed, August 24 (CVRS). Noted at Sand Bay in February, September and November. One at Kenn Moor, December 29 (GSu).

MOORHEN

Common in suitable habitats.

SA Bred in Botanic Gardens, Bath. Largest count at Chew Valley Lake was 70 on January 17 (KEV); but only four broods seen later (AM).

COOT

NA Bred at Littleton Pits and at Hoar Gout, Avonmouth.

SA A partial albino was noted periodically at Blagdon and Chew Valley reservoirs until May. It appears that no young were reared at Chew, as a result of the low water level. The peak monthly counts at Chew Valley Lake were as follows:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
400	621	725	544	560	885	1088	1820	1692	?	1215	1340

At Blagdon reservoir, 289 were counted in February.

OYSTERCATCHER

NA Up to four at Chittening Warth, January to May 9, and up to eleven, July 23 to year-end.

SA Present on coast all year. Maximum counts: Weston Bay/Axe Estuary, 100 on January 3; 160 on September 11; 110 on November 6; at Sand Bay, 50 on March 28 and 60 on December 12; Clevedon to R.Yeo, 37 on February 24. Chew Valley Lake: single birds noted, March 27 and June 6; up to three, July 29-August 16, and single birds, October 15-16 and December 26.

LAPWING

NA At Northwick Warth, 500 to end of February, 200 in early July, 800 from July 24 to August 28, then 500 to end of year. Other large counts: 200, Pucklechurch, July 11; 374, Little Sodbury and 160, Horton, October 5; 400, Westerleigh Common and up to 600, Tormorton, November 21. On R.Avon at Sea Mills: up to 20, January and February, and 30-40 July onwards, but flocks of 100, July 11 and 75, September 5.

SA Breeding proved at Portbury, Nailsea Moor, Bower Ashton, Queen Charlton, Redhill and Stowey Hill; and probable at Clevedon, Chewton Keynsham and Stanton Prior. Winter numbers were greatest in January with flocks of 1,000 or more at Chew Valley Lake (2,200), Axe Estuary (1,000) and Weston-s-Mare Airfield (2,500). Autumn flocks were noted from July 10, with peak counts as follows:

	Blagdon Res.	Chew V. Lake	Clevedon/Yeo	Axe Est.
July	400	1,500	230	
August	800	1,900	750	
Sept-Dec	175 (Sept. 12)	980 (Dec. 28)	1,300 (Nov. 21)	1,600 (Dec. 11)

RINGED PLOVER

The table shows peak monthly counts in main areas: Severn Beach to Chittening, St. George's Wharf, Clevedon to R.Yeo, Sand Bay, Axe Estuary, Blagdon reservoir and Chew Valley Lake.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S.B.-Ch.	60	50	15	21	100	80	54	400	300	200	55	50
S. G. W.								6	9	6		4
Cl.- Yeo			11			109	20	1				
S. Bay	30	120	100			6	40	165	350	150	120	30
Bl. Res.			1	2			2	2	8			
C. V. L.		1		1	8		6	31	74	40		

LITTLE RINGED PLOVER

NA Two on R.Avon, Sea Mills, October 18 (TBS).

SA One, Chew Valley Lake, April 20, one-two, August 8 to September 19 and one, October 2. An immature bird, Blagdon reservoir, September 12.

KENTISH PLOVER

SA Full details were supplied by RA of one seen at the Axe Estuary on October 9, feeding with Ringed Plover and Dunlin. This is the third record for the Avon County area.

KILLDEER

SA One of this North American species, a rare vagrant to Britain, was seen at Chew Valley Lake on January 17 by KEV *et al.*, whose very detailed report mentioned larger size than Ringed Plover, double black breast-band and, in flight, noticeable orange rump, black tail with white outer feathers, and white wing-bar. Record, accepted by *British Birds* Rarities Committee, is the first for Avon County area.

GREY PLOVER

NA Noted mainly from the Chittening-Severn Beach area: up to four until May 29 and from September 25 to end of year, with 26 on October 8 and eight on November 11. Two at Aust on February 21 and 20 there on September 26; up to five at Northwick Warth, September and October; single birds at Littleton Warth on February 15 and October 24.

SA Coastal records cover all months except May to July. Records of over ten birds: at Sand Bay, 14 on January 6 and on February 15; 18 on September 18 and 12 on November 13; at Yeo Estuary, 21 on September 19. At Chew Valley Lake, single birds were noted on two days in May, once in August, two days in September and one in October; and two on September 28.

GOLDEN PLOVER

NA Fifty in flight over Redland, Bristol on January 25 and 40 on 30th. In November, 250 were present at Westerleigh Common and 340 at Tormarton. Eight noted at Northwick, December 8 and 19.

SA Recorded from January to April 20 and from August 1 to year-end. Counts of 100 or more were reported in January from Kenn Moor (400), Weston airfield (130) and Chew Valley Lake (up to 164); in February, from Kenn Moor (125) and Weston airfield (up to 1,000); in March, from Kenn Moor (up to 400) and Clevedon to R.Yeo (up to 200); in April, 350 at Marksbury Plain; in October, from Axe Estuary (350) and Nailsea Moor (200); in November, Clevedon to R.Yeo (500) and Kenn Moor (125); and in December, from Axe Estuary (350), Nailsea and Kenn Moors (200) and Marksbury (207).

TURNSTONE

NA Large numbers only in Severn Beach-Chittening area, where up to 120, January to March; Spring passage peak was 350 on April 10, falling to 250 on the 24th and 200 on May 8. From May 13 to July 23, numbers varied between nil and 29; the autumn passage built up to 200 by August 23, then numbers fluctuated until November. Steady population of 80 throughout December.

SA Present on coast from January to May 25 and, except for two at Sand Point on June 22, from August 1 to end of year. Counts of ten or more only from Clevedon to R.Yeo (maximum 20, March 13). The only reports from reservoirs were of three at Chew Valley Lake on May 16 and one on July 20.

SNIPE

NA Present at Hoar Gout, Avonmouth, in every month except June; maximum of seven. At Chittening, up to six between January and March 27 and between October 15 and year-end. Up to 27 at Aust Warth in January and February, and up to eight in November and December. Two at Littleton Warth on January 18th.

SA Breeding proved at Nailsea Moor, and probable in the Gordano Valley. Reported widely from January to April and from August 29 to end of year. Present in every month at Chew Valley Lake (though only one in May and June). The largest counts, tabulated below, show that numbers were appreciably less than in 1975.

	Jan	Feb	Aug	Sep	Oct	Nov
Clevedon - R.Yeo	69				40	
Axe Estuary	130					45
Tickenham Moor	35					
Chew Valley Lake	58	40	57	88		

JACK SNIPE

NA One-two at Hoar Gout, Avonmouth, January and December; at Chittening, one-two until March 27, one in October and up to five in December; at Aust Warth, up to eight until March 13 and from October 2 to end of year.

SA Sand Bay: up to four until March 30 (ten on February 15) and from September 21. Two, Portbury Wharf, March 20; single birds there, October 24 and at Clevedon, November 27 and December 11; at Chew Valley Lake, two on January 26 and up to three in November.

WOODCOCK

NA Reports *per* MJP of one or two in Midger Wood, Hawksbury and in Lower Woods, Wickwar, in winter 1975-6 and 1976-7, but no dates recorded. One at Hallen, January 17 (NTL). One feeding at roadside, Lawrence Weston Lane, Bristol, August 28 (RGT). One in flight, Eastville Park, Bristol, October 30 (BLK).

SA Single birds at Bristol Crematorium, Arno's Vale, January 5 (AJB); feeding at roadside, Burrington Combe, February 2 (BR); roding at Hunstrete, April 8 (JH); flushed from dunes at Sand Bay, October 20 (RA, TB); and near Chew Valley Lake, December 12 (AFJ).

CURLEW

The table shows peak counts in main areas (no reports in May): Littleton Warth, Severn Beach, R.Avon (Sea Mills), Portbury Wharf, Clevedon to R.Yeo, Sand Bay and Axe Estuary.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
L. W.	1								3	17	16	75
S. B.	100	100	65	15	Nil	60	120	150	150	150	150	70
R.Avon	26	24	20	6		2			1	12	36	44
P. Wharf			28				35					
Cl.-Yeo	25	35				11	155	240	65		39	
S. Bay	88	173	120	13		12	90	118	175	173	123	60
Axe Est.	149		63									

Single birds were noted at Chew Valley Lake in February, May and October, up to six in July and three on August 22.

WHIMBREL

NA Reported from Chittening area in April, May and August (ones and twos, except for 10 flying S.W. on April 30).

SA Noted on coast from April 18 to May 22 and July 3 to October 10; 27 reports of up to five birds, eight of 6-10, and eleven of 11 or more. Largest numbers were 30 at Kingston

Seymour in April; 15 at Clevedon in May; 21 on Kenn/ Nailsea Moors in July and 18 at Clevedon in August. At Chew Valley Lake, single birds were noted in April, July and August, and in May up to eleven to the 13th.

BLACK-TAILED GODWIT

Very few records in first half of year.

NA At Chittening, one on March 5-6, eight on November 13-14 and four on 17th. At Northwick, up to five in August; up to 18, September; and up to 25, October. One at Oldbury Pill, September 19 and eleven at Littleton Warth on October 17.

SA Sand Bay: eleven, January 6; up to two in September, 14 in October and 40 on November 7. Axe Estuary: one, March 20; three, September 18, and 34 on 25th. Yeo Estuary: four, July 25 and one, September 15. Chew Valley Lake: one, January 1-March 2, with 2, March 6; one, May 28; up to three, July 17-September 21, with ten September 2 and five on 5th. Blagdon reservoir: three, May 31; one, September 11 and three next day.

BAR-TAILED GODWIT

NA Mainly recorded between Chittening and Northwick, where up to 15 were present between January 31 and February 10; on Spring passage, counts included 75, April 26; 91 on 27th and 45 on 28th; two were present on May 1. Autumn passage produced four records of up to six birds, also 12 on September 26 and on October 1, and eight, October 2. One was present at Chittening on December 26. Elsewhere, up to eleven were noted at Oldbury on Severn in September, and five at Littleton Warth on October 17.

SA Recorded on the coast from Clevedon to Axe Estuary. Highest counts were 7 (February), 13 (April) 12 (May), 5 (June), 9 (August and September), 6 (October) and 2 (December). A single bird was noted at Chew Valley Lake from February 8 to May 9; also 25 (in flight) there, August 31, seven on September 11 and two on the 21st.

GREEN SANDPIPER

NA Up to four at Hoar Gout, Avonmouth, in January, March and August 21 to end of year; single birds at Aust, March 27 and August 24; two at New Passage, October 31; two at Avonmouth Sewage Works on four dates in November, and one on three dates in December.

SA Thirty-five coastal records, January to May 23 and July 11 to December; thirty related to up to four birds, the others came from Portbury and St. George's Wharves on autumn passage - 11, August 28, five on 29th and six on 30th; five, September 12 and nine, October 24. Numerous records from Chew Valley Lake: up to three from January to June 27 (but five, April 3), and up to ten from July to November 7, with more on autumn passage - 12, August 16; 18 on 19th, 22 on 25th, 15 on 28th and 21 on September 2. Seven other records from inland places were all of one or two birds.

WOOD SANDPIPER

SA Coastal records of one at Woodspring Bay, August 11 and three at St. George's Wharf, September 12. Eighteen records from Chew Valley Lake, where one seen, April 1, two July 14 and up to four from August 14 to 28.

COMMON SANDPIPER

NA Records (28) of up to six, Aust to Chittening, April 16 to October 8. On R.Avon, one near Freshford, May 7, four between Hanham and Conham next day, and 16 records from Sea Mills area of up to three, February 2-December 15.

SA Records (119) cover all months except January. Maximum of five birds on coast and reservoirs, February 10-June 19; up to 16 at Chew Valley Lake and 11 at Blagdon reservoir in July; 34 at Chew and up to 18 at coastal sites in August. From September to December the only count over six was of 20 at Chew Valley Lake, September 2.

REDSHANK

Breeding reported in SA at coast near Clevedon and at Blagdon reservoir, and probably bred on Nailsea Moor. Maximum monthly counts are given in the table for the main areas: (1) Severn Beach; (2) R.Avon (Sea Mills); (3) Clevedon to R.Yeo; (4) Sand Bay; (5) Axe Estuary; (6) Chew Valley Lake; (7) Blagdon reservoir.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
January	250	64	120	60	250	5	
February	250	90	52	110		12	
March	250	50	77	80	30	1	
April	60		45	50		1	
May	nil		27			1	
June	100					5	
July	450		150	45		8	9
August	600		223	186		16	
September	500	25	139	210		1	
October	400	60	66	120	210		
November	200	110	93	60	110	1	
December	300	70	41			2	

Note: 'nil' indicates a definite report of no birds seen in many visits; absence of an entry means that no reports were received.

SPOTTED REDSHANK

NA Single birds at Chittening on August 13 and at New Passage on the 17th; two at Chittening, September 5.

SA Eleven coastal records, August 21-October 13, of one or two at Portbury Wharf, Yeo Estuary and Sand Bay. Many records from the reservoirs, January 16-November 13, all of one or two birds except in September, when 8-13 were noted at Chew between the 9th and 28th.

GREENSHANK

NA One record - a single bird at Chittening, August 11 (RGT).

SA One at Chew Valley Lake, January 2 (DP) and two at Litton Reservoir on February 25 (DL). Two spring records from coast: one at Portbury Wharf, April 18 and one at Sand Point on the 22nd. Autumn passage on coast, July 18-October 27, with up to 13 at Sand Bay in August, otherwise up to eight at St. George's and Portbury Wharves, Yeo Estuary, Sand Bay and Axe Estuary. Recorded at reservoirs from May 8 to October 14, with maxima of six at Blagdon, August 22, and of ten at Chew on September 2.

KNOT

NA Chittening to Severn Beach: one in May, three in August, four in September, 100 from October 9-24, falling to 30 on 30th, 25 on November 6 and 8 on 27th. At Northwick, 100 present, September 29 and 166 on October 1 and 2nd. One at Littleton Warth, October 24.

SA Coast: noted, January to April 11 and from July 28, usually not more than eleven birds, but at Sand Bay 42 on February 4 and 17 on September 12, and in Axe Estuary 22 on December 27. Reservoirs: one, Chew Valley, August 28 and two on 31st; one, Blagdon, August 22.

PURPLE SANDPIPER

NA Severn Beach to Chittening: up to four, January to May 22 (but six on April 10), and single birds, September to end of year.

SA Single birds at Sand Point, September 27 and November 6 (TB, DSF).

LITTLE STINT

Unusually high numbers on autumn passage.

NA Severn Beach - Chittening: three (one in summer plumage), May 25 (RGT); two, August 27; noted on four dates in September (max. of 14 on 24th - RGT); two, October 2-3 and one on December 4. Five at Northwick Warth on September 26 and one at Oldbury Pill on 28th.

SA Coast: up to three at Sand Bay and Axe Estuary, September 13 to October 27; up to 19 at St. George's Wharf in October. Reservoirs: up to four at Blagdon, September; noted at Chew Valley Lake, September 14 to November 1, with peaks of 28 on September 27 (PJC), 26 on 28th (AM), 14 on October 3 (JCL) and 23 on 4th (AM).

DUNLIN

Our commonest wader. The table shows monthly maximum counts in the main areas: (1) Severn Beach to Chittening; (2) St. George's Wharf; (3) Clevedon to R.Yeo; (4) Sand Bay; (5) Axe Estuary; (6) Chew Valley Lake.

	(1)	(2)	(3)	(4)	(5)	(6)
January	4,000	200	12,500	1,500	4,500	660
February	4,000	1,200	1,750	3,500	2,000	390
March	3,000	750	3,150	1,200		300
April	600	90	450	550	30	1
May	250		520	200		21
June	80			20		
July	850		28	320		59
August	600	12	266	500		60
September	600	14	118	2,200	300	53
October	3,000	750	3,950	2,500	1,500	22
November	5,000	850	5,250	700	1,800	100
December	5,000	750	3,700	2,500	2,000	1
	NA	---SA---				

CURLEW SANDPIPER

NA Aust to Chittening: one, August 14; three, September 25; two on 26th, two October 10.

SA The only coastal records were from St. George's Wharf: six, October 18 and one, November 21. Noted at Chew Valley Lake from August 31 to October 4, with maximum of eight on September 21. Single birds at Blagdon reservoir on September 11, 12 and 14.

SANDERLING

NA Occurs mainly from Severn Beach to Chittening, were noted on five dates in May (max. of six on 13th), June 1 (two), July 17 (two), July 26 (one) and Aust 21 (two). One, Oldbury on Severn, September 2.

SA Noted at Sand Bay and Axe Estuary from January to March 6, with up to eleven at the former and two at the latter site. Noted again at Sand Bay from August 31 to November 10, with maximum of 14 on October 13.

BUFF-BREASTED SANDPIPER

SA One of this N.American species was seen at Chew Valley Lake on September 29 (PJC, PARH) and again, October 3-6 (several observers). Record, 7th for county area, accepted by *British Birds* Rarities Committee.

RUFF

NA Three in flight over R.Avon, Sea Mills, April 18. One at Aust Warth on September 25, and three next day, when seven also present at Northwick Warth on September 25; and three next day, when seven also present at Northwick Warth.

SA Nine coastal records, August 31 to year-end, of up to four birds. Present at the reservoirs in every month; unusually high numbers noted during spring passage, when the total at Chew Valley Lake reached 56 on February 29 (PJC) and a record 101 on March 13 (AM, KEV). Maximum counts on autumn passage were 26 at Blagdon reservoir on September 24, and 37 at Chew Valley Lake on the 28th.

AVOCET

SA One reported from Yeo Estuary on May 16 (KLF) and on June 6 (TBS). One seen in flight at Chew Valley Lake, December 19 (AM *et al.*)

GREAT SKUA

SA One observed from Sand Point, July 4 (RA).

ARCTIC SKUA

SA A few records from Brean Down (Som.) include three of single birds entering or leaving Avon waters, on April 29 and May 7 (BR) and August 7 (TAB). One immature at Chew Valley Lake, August 31 (KEV) was, like the others, a dark-phase bird.

LONG-TAILED SKUA

SA One at Chew Valley Lake, June 19 (RMC, RM). Record, accepted by *British Birds* Rarities Committee, is fifth for Avon county area.

GREAT BLACK-BACKED GULL

Records show the species' status more correctly than hitherto.

NA Two, Oldbury Power Station, September; at Chittening Warth, three in September, two in October and single birds to year-end. On R.Avon, three between City Docks and Bridge Valley, January 11; one or two, Avon Gorge, in February and at Sea Mills, March, April, September and October. Up to six, City Docks to Avon Gorge, October.

SA Reservoirs: two, Barrow Gurney, January; two adults, Blagdon, November; at Chew Valley, up to four, January to May, a pair holding territory on Denny I. in late May-June, a pair and three other adults on June 26 (AHD, KEV), two in August, three in November and up to six in December. Coast: R. Avon to Portishead, up to 15, February to May, up to nine in July and September and up to 14 in October; Clevedon (Black Rock), two in March and July. About 30 nests on Steep Holm (AJP).

LESSER BLACK-BACKED GULL

Urban nesting: nest with two young on roof, Westgate Street, Bath; in Bristol, 23 pairs estimated breeding, mainly on roofs in Temple Meads - Redcliffe area, with one or two pairs also in Feeder Road, Prince Street and Canon's Marsh. Other breeding records: rough estimate of 500 pairs nesting on Steep Holm (AJP); at Chew Valley Lake some 5-15 pairs nested on Denny I., seven young being noted in July.

At the West Dock, 21 present in May showed the characteristics of the Scandinavian race (TBS).
Roost counts: 2,000 at Chew Valley Lake, April 20 (AM) and 800, October 28 (RJP); 126, West Dock, November 28 and up to 94 in December (TBS).

HERRING GULL

Urban nesting: one pair with young on roof, Westgate Street, Bath, but six adults present in June (RMC); in Bristol, 50-60 pr nesting on roofs, mostly in Redcliffe - Temple Meads area (PJC, RGO *et al.*).
SA Three pairs (one pair with young) on cliff edge, Church Hill, Clevedon, where a pair nested in 1975 (JFB). On Steep Holm, sample counts by AJP gave an estimate of 6,300 nests (some 1,800 less than the estimated total in 1974 - cf. *Proc. BNS* vol. 35, p. 94). Flocks reported included 300 on Weston-s-Mare Airfield, January 26.

COMMON GULL

NA Flocks of up to 150 were reported in November and December from Falfield Hill, Thornbury, Wickwar and Horton.

SA At Portishead, noted mainly as an off-shore feeder, January to early May and October to December; usually not more than 20, but 40 on March 14th. In January, 250 on Axe Estuary, 320 at Locking and up to 200 at Weston-s-Mare airfield. 400, Chew Valley Lake, October 30th.

GLAUCOUS GULL

SA A bird seen at Chew Valley Lake on April 25 and May 1 was possibly of this species but was not seen at rest (AHD, RS, SW). One at Axe Estuary, May 1 (BR); one at Sand Point, July 10 (TBS).

MEDITERRANEAN GULL

SA DCSD and KEV supplied at full description of one seen roosting with other gulls at Chew Valley Lake on February 14 and again on 28th.

LITTLE GULL

SA More were reported in spring than in 1975. Chew Valley Lake: two immatures, March 26 (EC); an adult, April 24; an immature, 28th and eight (5 adults) on 30th; an adult and an immature, May 1, and an immature next day; one-two, August 24-30; single birds, September 4-9, two on October 19 and one on the 26th. An immature bird at Portishead, December 26.

BLACK-HEADED GULL

NA Large flocks reported included 1,500-2,000 on Durdham Down.

SA One with a yellow ring and yellow-stained underparts, seen at Weston Bay on January 10 (RA) had probably been ringed and dyed by the London Gull Study Group at Egham, Surrey, October 1975 (*per* P. Stanley). Monthly counts, Clevedon to R. Yeo, by KLF show marked increases in numbers in spring and autumn, presumably through birds on passage:

January	338	August 1st	870
February	255	August 29th	1,330
March	168	September	700
April	521	October	940
May	18	November	159
		December	257

A flock of 600 on grassland at Wraxall in October included an unusually high proportion (20%) of immature birds (PJC). Roost counts by TBS: some 6,000 at Avonmouth or in the West Dock when tides were high in late November and December; the roost in the Axe Estuary held fewer than 1,000 birds in December.

KITTIWAKE

NA One off Severn Beach, July 18.

SA Coastal records in Avon waters:

	Jan		Apr	May			Jun		Oct		Dec
	3	22	8	1	16	20	4	12	22	30	5
Portishead	1										
Sand Point			11		20		16	4			1
Off Steep Holm		1									
Off Brean Down				13	13				1	4	

Single dead birds noted at Weston Bay, May 31, and there and Sand Bay, December 5th. One inland record - an immature, Blagdon reservoir, July 31 (PRB).

BLACK TERN

NA Noted, September 25-October 12; up to five, Avonmouth Sewage Works and single birds at Aust, New Passage and Chittening Warth.

SA Another very small spring passage: three at Chew Valley Lake on April 28 and on May 5, and one at Barrow Gurney on May 7. The autumn passage was marked at Chew Valley Lake between August 7 and September 28, with peaks of 23 on August 22, 135 on September 20 and 46 next day; then ones and twos to October 26. Four, Blagdon reservoir, August 22, then ones and twos, September 4-11 and October 4-12. Two at Barrow Gurney reservoirs on September 23, four, October 2 and three on 9th. Single birds at Portbury Wharf and Sand Bay on September 26.

COMMON TERN and ARTIC TERN

NA The only record was of two at New Passage on October 17.

SA In spring there was a marked coastal passage from April 20 to end of May. One, Portishead, April 20; 63 at Sand Point on 28th, 132 on May 12 and 14 on 18th; similar numbers reported from Brean Down (Som.) presumably passed into Avon - peak count there was 135 on May 25. Inland, only a few birds at Chew Valley Lake, with a maximum of ten on April 22; one seen there on June 28.

The autumn passage was noted mainly at Chew Valley Lake, with small numbers from July 28 to October 19 (maximum of 12 on August 14). On the coast, 16 at Sand Point on July 20, and eleven on August 5; also six at Portbury Wharf and one near Clevedon on September 26. Common Terns were specifically identified at Chew Valley Lake on May 22 (five), May 29 (one), September 3 (three) and 28th (two). One Arctic Tern was identified there on October 19 (AM).

LITTLE TERN

NA Immature birds noted at New Passage on October 10 and 16, and (probably the same bird) at Chittening Warth on the 17th (NTL, RGT). One at Aust, September 26-27 (BL, NTL).

SA Single birds at Sand Point, May 22 (TBS); St. George's Wharf (immature), September 26 (WGB) and Axe Estuary, October 2 (RA). Two, Chew Valley Lake, August 8 (SBE).

SANDWICH TERN

SA Single birds off Brean Down on April 11 and 25 (BR, BES), May 1 (TB), July 2 (BR) and August 7 (TB) presumably entered Avon waters. Three, Sand Point, July 20 (TB); two, Weston-s-Mare, August 21 (AJP). Chew Valley Lake: one, July 17 (AM, RS) and five, September 20 (BR).

GUILLEMOT

SA One, May 29, ½ mile east of Steep Holm (TBS).

STOCK DOVE

Large flocks: up to 500, Chittening (NA) in February and of 200+ at Chelwood (SA) in November. Four nests, Steep Holm.

TURTLE DOVE

SA Breeding-season records from St. George's Wharf, Leigh Woods, Failand, Brockley Combe and Chew Valley Lake.

BARN OWN

Breeding-season records in NA from Wick and Frampton Cotterell (single birds); and in SA mainly between Bath and Chew Valley Lake, but also at Nailsea and Woodspring, with two nests in one locality.

LITTLE OWL

Noted in 63 one-km squares (18 in NA). Several reports from 10-km square ST67 (none in 1975) but only one from ST78. No reports from Cotswold or Mendip areas. Breeding proved at Doynton (NA) and Stanton Prior, Long Ashton, Nailsea, Barrow Gurney, Blagdon, Locking.

TAWNY OWL

Records from 60 one-km squares (21 in NA). Breeding proved at Marksbury, Stanton Prior and Queen Charlton (SA).

LONG-EARED OWL

A number of records followed the influx of late 1975.

NA One found exhausted, Frenchay, January 17, released at Chew Valley Lake, March 31 (*per* AHD). Two roosted at Severnside in February - one ringed on 18th, one still present, mid-April. One at Filton (within British Aircraft Corp. site), May, (DAC, GC, RJP).

SA One hunting Starlings at roost on Steep Holm, January 18-19 (G.P. Mudge *per* P. Ferns). One found exhausted on Avon Bridge, M5 motorway, March 8 (RGS) died later. One, Chew Valley Lake, May 1 (DW).

SHORT-EARED OWL

NA One or two noted at Chittening Warth, February 21 to March 13; also single birds on April 26, September 29, October 9, November 15 and 28th. At Aust, single birds were present on October 17 and November 20.

SA Two, Chew Valley Lake, May 8-9 (one trapped and ringed). Single birds were present on October 17 and November 20.

ROLLER

SA One, Kenn Moor, August 16 (AB); record accepted by *British Birds* Rarities Committee, is first for Avon County area.

HOOPOE

SA One at Long Ashton Golf Course, June 15 (RNC).

LESSER SPOTTED WOODPECKER

Breeding-season reports from 25 localities (10 in NA).

WRYNECK

NA One at Severn Beach, August 29 (NTL, RGT).

SA Single birds: Sand Point, August 29, September 1 (JB, TB); Barrow Gurney reservoirs, September 3 (DJP) and Backwell on 8th (HAT *per* GEC).

WOODLARK

NA One, Severn Beach, April 3 (NTL, RGT).

SA One, Middle Hope, July 29, calling in flight (TB).

SAND MARTIN

Only one breeding record received: at least four nests in wall drains, Glenfrome Road, Bristol (NA), overlooking R.Frome (RH, BLK).

RAVEN

Up to four birds noted, January 17-April 30 and August 29-November 4 at Oldbury on Severn, Littleton on Severn and Cromhall (NA) and Leigh Woods, Steep Holm, Weston-s-Mare and Blagdon reservoir (SA).

HOODED CROW

NA One, Durdham Down, Bristol, December 26 (PJC).

SA One, Chew Stoke, December 28 (SCF).

WILLOW TIT

Seventeen records received, but none with supporting details.

DIPPER

One or two noted, Little Avon and R.Frome (NA), and Combe Hay, Midford, Limpley Stoke, Shockerwick, Chew Magna and Radstock (SA).

BEARDED TIT

NA Two, Hoar Gout (Avonmouth), November and December (RGT).

SA Up to seven, Chew Valley Lake, October 31-December (JA, EC, PJC).

RING OUZEL

NA A male, Kingsweston Down, Bristol, March 29 (PGF).

SA Up to three, Sand Point, March 18-April 22 (PDB, TB).

WHEATEAR

Widespread records from NA and SA of up to 25 birds on passage, March 9-May 23 and July 18-October 30. Breeding proved at Charmy Down (NA), near Bath - first time for county area since 1960.

STONECHAT

Records (182, of which 40 were in NA) from widespread places and all seasons - mainly of single birds or pairs, though up to 17 at Chew Valley Lake in autumn and winter. Breeding-season records in NA from Oldbury on Severn; Chittening and Purdown, Bristol (pair); and in SA from Whitchurch old airport*, Stockwood tip (Bristol), Queen Charlton, Burrington Combe, Chew Valley Lake*, Portbury Wharf and Sand Point*. Breeding proved where marked *.

WHINCHAT

Reports (69) of up to nine birds from 19 localities, April 20 to October 17.

REDSTART

Records (24) of one or two birds, April 11-October 31 in NA from Oldbury on Severn*, Duckhole (Thornbury), Hallen, Filton and Clifton Down, Bristol; and in SA from Knowle and Ashton Park* (Bristol), Portbury, Wraxall*, Goblin Combe, Kingston Seymour, Steep Holm, Sand Point, Uphill and Bleadon. * denotes breeding proved.

BLACK REDSTART

Single birds in March, April and October to December, in NA from Chittening and in SA from Stockwood and Bedminster (Bristol), Nailsea, Portishead, Clevedon, Sand Bay, Weston-s-Mare and Chew Magna.

NIGHTINGALE

Reports of up to eight singing males (May 5-27, in NA from Oldbury on Severn, Littleton on Severn, Olveston, Tytherington, Inglestone Common (breeding proved), Compton Greenfield, Frampton Cotterell, Ashwick Park, Winterbourne Down, Banner Down; and in SA from Friary Wood, Bath; Limpley Stoke, Midford, High Littleton, Woollard and Shipham.

GRASSHOPPER WARBLER

Singing males reported, April 24 to July 24, in NA from Filton*, Littleton on Severn and Doynton; and in SA from Abbots Leigh, Kingston Seymour*, Dundry, Wrington Warren, Sand Point, Worlebury, Burrington and Chew Valley Lake. Breeding proved where marked *.

AQUATIC WARBLER

NA One trapped, Littleton on Severn, August 14 (MPR *et al.*).

SA One, Chew Valley Lake, August 16 (PRB). Both reports accepted by *British Birds* Rarities Committee.

CHIFFCHAFF

SA A grey-brown bird at Chew Valley Lake on November 5 showed the characterisitcs of the Siberian race *P. c. tristis* (AM).

WOOD WARBLER

SA Reports of one or two birds, April 19 to August 26, from Ashton Park, Leigh Woods, Abbots Leigh, Abbots Pool, Wraxall, Brockley and Goblin Combes, Weston Woods, Rainbow Wood and Chew Valley Lake.

FIRECREST

SA An immature male was trapped on Steep Holm, October 3 (AJP).

PIED FLYCATCHER

Single birds reported, April 22 to October 2, from Chew Valley Lake, Saltford Sewage Farm and, in Bristol, from Eastville, Vassalls and Temple Parks and Knowle. Four trapped, Steep Holm, August 23-26.

TREE PIPIT

Up to five reported, April 3-October 17, from Chittening and Lawrence Weston, Bristol (NA) and Charmy Down (breeding proved), Blagdon and Chew Valley reservoirs, Dolebury and Wrington Warrens, Abbots Leigh, Portbury Wharf, Sand Bay and Steep Holm (SA).

WATER PIPIT

Three, Aust (NA), March 3; up to seven noted at Barrow Gurney and Chew Valley reservoirs, January 1-April 14 and October 26 to year-end.

PIED WAGTAIL

Roosts of up to 150 noted at Bath University campus, Chew Valley Lake and, in Bristol, at Broadmead and Cumberland Basin.

WHITE WAGTAIL

SA Up to three, April 4-24, Chew Valley Lake and Clevedon-Yeo.

RED-BACKED SHRIKE

SA Two on passage near Clevedon, April 25 (LCH, WHH). A juvenile was ringed at Chew Valley Lake on October 10 (CVRS).

HAWFINCH

Up to seven birds reported from Royal Fort, Clifton and Durdham Downs, Bristol (NA); and Bristol Crematorium, Abbot's Leigh, Leigh Woods, Cadbury Camp, Combe Down and Perrymead (Bath), in SA.

SISKIN

Eighty reports from widespread localities (NA and SA), up to April 30 (maximum 60) and from September 18 (maximum 25).

TWITE

NA Four at Chittening, November 13 (DSE).

SA Eight, Locking, February 1; eleven at Clevedon, March 2-30 and two on October 24; and one at Sand Point, November 6 (KLF, HRHL, TBS).

REDPOLL

75 reports of up to 25, NA and SA, to May 16 and August 25 onwards. Two or three displaying, Burrington Combe, May and June (PJC).

BRAMBLING

Reported up to April 28 and from October 17. Large flocks in January and February at Aust (400), Northwick (2,000), Severn Beach (500) and Chittening (2,000) in NA; and St. George's Wharf (600) and Whitchurch old airport (150) in SA. Fewer in autumn - maximum 52 at Clevedon and 35 at Sand Bay.

CORN BUNTING

Up to 21 noted, Badminton, Tormarton, Abson (NA) and Abbot's Leigh, Queen Charlton, Stanton Prior, Corston and Lansdown (SA).

CIRL BUNTING

SA Bred at Wrington; pair noted at Bleadon Hill in March (SB, SBE).

LITTLE BUNTING

SA One ringed at Chew Valley Lake, January 4 (CVRS). Record, first for Avon County area, accepted by *British Birds* Rarities Committee.

SNOW BUNTING

Up to three, Chittening and Filton (NA) and St. George's Wharf, Clevedon and Sand Bay (SA), up to February 25 and October 24 onwards.

OTHER COMMON OR REGULARLY-OCCURRING SPECIES PRESENT

Those marked * are referred to in the Foreword.

Residents: Pheasant, Green and Great Spotted Woodpeckers, Skylark, Crow, Rook, Jackdaw, Magpie, Jay; Great, Blue*, Coal, Marsh and Long-tailed Tits; Nuthatch, Treecreeper, Wren*, Mistle and Song Thrushes, Blackbird, Stonechat, Robin, Goldcrest*, Dunnock, Meadow Pipit, Grey Wagtail, Starling*, Greenfinch, Goldfinch, Linnet, Bullfinch, Chaffinch, Yellowhammer, Reed Bunting, House and Tree Sparrows.

Summer and Winter Visitors: Swallow, House Martin, Fieldfare, Redwing, Reed Warbler, Sedge Warbler, Blackcap, Garden Warbler, Whitethroat*, Lesser Whitethroat, Willow Warbler, Chiffchaff and Yellow Wagtail.

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AVON MAMMAL REPORT, 1976

By A.F. Jayne

A change of mammal recorder for the Society was necessitated by Roger Symes leaving the area in connection with his work. Mr. Symes' departure coincided with his completion of the tenth mammal report for the Bristol district, all but the first one of which were compiled by himself.

The Mammal Section committee decided to conclude the existing survey on completion of a set of distribution maps to the end of 1975 (Symes, 1976) and to inaugurate the Avon Mammal Survey which it is envisaged will run for the next 10 years. The two surveys may then be compared to ascertain whether any significant changes have taken place over the two periods.

The Avon survey will be continued on the 1 km square basis, the main difference being the adoption of the Avon County boundary as opposed to the area described by Symes (1971).

A good level of interest was maintained among members during 1976, when a total of 752 records were received from 74 observers. One fifth of these were of foxes, many being of urban sightings - an indication of the continuing increase of this adaptable animal within the City limits.

Many thanks are due to the following contributors of records:-

G. Alderslade, R. Angles, A. Bailey, D. Baker, Mrs. H. Baker, M.R. Ballard, G. Barnfield, A.D. Barrett, P.B.S. Bazeley, Mrs. Bennett, R. Bland, T. Bomford, Dr. R. Bradshaw, Miss M.E. Bridge, A.J.R. Burberry, R.A. Burberry, R.J. Burberry, Mrs. V.M. Burberry, J.F. Burton, T. Cairns, P.J. Chadwick, J. Chapman, M.J. Chapman, M.D. Clark, R.M. Curber, D.I. Davis, Mr. Dunnicliffe, Miss H. Elliott, F. Farrel, Dr. Fray, D.A. Griffiths, Mrs. D. Hall, Miss K. Hall, Miss T.M. Hamand, H.R. Hammacott, Miss C.J. Haskins, M.S. Hodges, Mrs. J. Hamphris, N.P. Humphris, R. Humphris, M. Hurst, A.F. Jayne, M. Jayne, Mrs. P. Jayne, Mrs. Kerswell, G. Kramer, Miss E.J. Lenton, Mrs. McKeag, D.C. Mainhood, T. Male, M.Millet, J. Milton, M.B. Nelson, M. O'Shaughnessy, Miss B.J. Parsons, J.C. Phillips, D.J. Poulter, E.W. Powell, J.G. Prince, Mrs. S.E. Prince, E. Rawlings, F.H. Rawlings, Dr. H.E. Rose, A.D. Rossiter, J.E. Rowntree, Dr. R.J.G. Savage, L. Scapens, F.V. Spittle, Mrs. M. Stanton, R. Surch, R.G. Symes, R.G. Thomas, Miss J.B. Webb, R. Wild, Bristol Evening Post.

Check list numbers and names are taken from Corbet (1964) with the exception of "Black" and "Brown" rats which have been substituted with "Ship" and "Common" respectively to avoid confusion due to colour variations in both these species.

1. HEDGEHOG. The majority of records received were of road casualties which nevertheless give some indication of the numbers and activity periods of the species. No casualities were reported during January or December although an adult was photographed in an urban garden, drinking from a saucer of milk, on Christmas Day (TM). Another was seen foraging in fallen leaves in a City cemetery during mid-February (AB). One adult was seen with four young and a nest located under a shed in a suburban garden (JCP). A litter of 5 was found by Dr. Fray of Portishead at the white spine stage, the mother being killed on the road during September. The litter was hand-reared and kept indoors with the four survivors (all female) still doing well in mid-December. The spines are white and soft in very young hedgehogs, but harden and colour by four weeks of age (Southern, 1964).

2. MOLE. Records were received from twelve 10 km squares with one member (RB) reporting molehills from 24 different 1 km squares. Molehills account for by far the greater numbers of our records, being easily seen, particularly during the winter months when the herbage is at a minimum. Two animals were seen foraging on the surface during the latter part of the long dry summer (AFJ) whilst another was watched on several occasions making surface tunnels in clover on a lawn (JH). Of four dead moles seen, one was in a pool of water (HRH), one was squashed on the roadside and one killed by a dog which had caught it above ground.

3. COMMON SHREW. Skulls from discarded bottles were identified from 5 different locations (AFJ, JBW). Eight records were received fo dead animals. Remains of shrews are more frequently found than other small mammal species as most predatory mammals do not eat the bodies of insectivores. Owls, however, are not so selective, the remains of shrews commonly being found in their pellets.

4. PYGMY SHREW. One member (HRH) trapped pygmy shrews in his garage on 7 occasions.

5. WATER SHREW. The only record of this species was from remains found in a bottle during the Mammal Section field meeting in the Tortworth area on 22 February.

BATS. Several records received of unidentified species were useful as indicating the presence of bats and could be useful in the future when it is hoped that the Section can obtain some of the specialist equipment necessary for the positive identification of species.

Two bats flying very close together and sighted in car headlights took last-minute evasive action. One was heard to strike the front of the vehicle and after a ten minute search of the country lane, an apparent body was found on the grassy bank. It was picked up and about to be examined when it suddently flew from the hand before it could be identified. A visit made on 26 August to a Somerset Trust reserve (RGS, AFJ) to examine bat boxes, set there during 1975 by the Mammal Section, revealed 2 of the 16 boxes with single bats in them. The bats were not removed for identification as it was considered possible to damage them in removal from this design of box. This was an evening visit and bats were seen flying in the rides of the wood before the round was completed, so there could have been others using the boxes.

8. GREATER HORSESHOE BAT. 3 Seen in April, 1 in August in a known small roosting place (EJL, AFJ).

19. PIPISTRELLE. One was found dead on a barbed-wire fence (HRH). Another, found in a chimney, during constructional work, was transferred to a bat box but was found dead several days later in its original place in the chimney (JH).

21. COMMON LONG-EARED BAT. One was found dead in a Nailsea barn (HRH). A specimen found dead in Winterbourne Church belfry was presented to The Ridings School, Winterbourne.

24. FOX. 162 records from 23 adjoining 10 km squares were received from fifty different observers. Six families were observed, 2 of them within the City boundary, at Redland (BJP) and at Bishopston (DAG). Four very small cubs, estimated at 4 weeks old were seen in the centre of a country lane, causing the driver of a vehicle (AFJ) to brake very sharply to avoid them. He was able to alight from the vehicle and approach to within a few feet before three of them disappeared into a roadside drain. The fourth was photographed with flash bulb equipment before it too withdrew. A vixen was seen (AFJ) to bring food into an earth area, containing 4 cubs, twice within half an hour. The first

time the prey was a small bird, the second a small mammal. The prey was carried inside the mouth with only the legs and tail visible. One family of three cubs was seen on different occasions by both Mammal and Ornithological Section meetings. The vixen of this family was later seen to have only one ear. There was a report in the Bristol Evening Post of a fox in the attic of a shop in Horfield (9 February). One was found in a dustbin on a Thornbury housing estate (Mrs. K). Nineteen sightings were made during the Mammal Section meeting in the early hours of 1 February.

27. STOAT. The seven records included a sighting of a party of 4 at the roadside (JH). An adult animal was twice seen swimming a ditch "apparently after young moorhen" (EJL). Another was seen being chased by a dog on Durdham Down from Westbury Road (JM).

28. WEASEL. The 22 reported sightings were spread over ten 10 km squares. Seven were in the Sand Bay/Middle Hope area (TB, RA). A group of "3 or 4" were watched running in and out of corn at the edge of a field (PJC).

30. AMERICAN MINK. Scats were found in 6 locations by members on a Section field meeting (25 April). One of these locations was the site of a lair, under a bridge, with a pile of scats, a water vole skin and grass bedding at the entrance. There was one sighting of a live animal on a road on Kenn Moor (RGS).

31. BADGER. One third of all reports were of road casualties (20). Cubs were reported from 3 setts only, 2 in the "country" (EJL, AFJ) and one in the City (CJH). Two of the families were of 3 cubs, the other a single cub. Three badgers were often seen feeding on the terrace of a house in Coombe Dingle (TMH). Two of the recorded live animals were lucky not to join the number of road casualties as one driver swerved to "just miss" one on the M5 (ADR) and the traffic waited for the other to cross the road in Lansdown, Bath (Mrs. B). The gassing of setts in the Thornbury area by the MAFF field teams was now well under way.

32. OTTER. From Miss E.J. Lenton:- "Evidence of presence was recorded along river in south of area at the field meeting in April. These were the first records here since pre-1960. Subsequent checks indicate visiting rather than a resident animal".

34. GREY SEAL. Seen in the River Avon at Sea Mills swimming towards the Docks (HER).

42. RED DEER. An unconfirmed report, by a farmer near Clevedon, of a red deer running with cattle was made to a member (JFB).

44. FALLOW DEER. An antler was found in thick scrub at the edge of a wood north of the A46 road (AFJ). It was obviously a vagrant from nearby Dyrham Park, where a herd is mainted at about 70.

45. ROE DEER. Three sightings were reported, two being 4 miles from the centre of Bath but diametrically opposite each other (EJL, TC). The other was a well-developed buck seen at Kendleshire on 29 June (AFJ) in a pasture alongside the M4 motorway. A subsequent search failed to find any further sign of it. A chance remark about six months later revealed that a deer had been in residence for 3 weeks during the summer in a small, secluded but barely accessible, nearby wood.

47. CHINESE MUNTJAC. An unconfirmed report of this species in North Avon.

53. BROWN HARE. Appears to be well spread throughout the area. One was put up in a flooded field on Nailsea Moor, it ran off splashing through flood water (HRH).

55. RABBIT. Another well-recorded species, its 94 records being second only to the fox. A colony were watched at dusk moving out from a rough scrub-covered bank into pasture field - the numbers building up to well over 50 as darkness fell. Small spring numbers built up rapidly to pest proportions locally around Tortworth by the summer (JH). These were decimated by an outbreak of myxomatosis in the autumn until very few were seen in November/December. A buzzard was seen feeding on carcasses and 4 ravens were present in the area for about a month during autumn. Myxomatosis was also noted in Leigh Woods (DJP) in August and from the Nailsea area in February (HRH). A black rabbit seen in a field adjoining the A432 at Nibley could have been an abandoned/escaped pet.

57. GREY SQUIRREL. Presence widely recorded from seventeen 10 km squares. Mostly sightings of single animals, although dreys were reported in 12 areas. Numbers were noted dashing about and scolding in mid-October (AFJ) - probably in competition for the substantial hazel nut crop. Very active and noisy adults were seen on two occasions in late December (EJL) which would coincide with the onset of the mating season (Forestry Commission).

59. DORMOUSE. Hazel nut shells opened by dormice were found in 10 wooded areas from three 10 km squares. Only one nest record was received. Examination of the boxes sited by the Mammal Section in a Somerset Trust reserve was made in December by Miss J.B. Webb. One hibernating animal and one very decomposed body were revealed. A further five boxes contained empty nests. A bird box on the same reserve was found to contain a litter of four yound dormice on 26 August (RGS, AFJ). These, estimated to be about 2 weeks old, are the first positive breeding record for the survey area.

61. HARVEST MOUSE. Five previously unknown sites were found early in the year (i.e. 1975 nests). Following the long dry summer very few nests were found (i.e. 1976 nests) even in sites previously holding large breeding populations. The general lack of density and height of rough grass and the very early harvest could have been contributory factors to this scarcity. One interesting nest was found attached to the side of a song thrush nest (AFJ).

62. WOOD MOUSE. Records received from eleven 10 km squares were obtained from remains found in discarded bottles, sightings of live and dead animals, live catches in Longworth and Flap traps and evidence of gnawed hazel nutshells. Twenty were trapped throughout the year in a garage and workshop in Nailsea (HRH).

64. HOUSE MOUSE. Of the three records received one was of a sick mouse seen on a Lansdown-Bath footpath (EJL).

65. SHIP RAT (*Rattus rattus*). A half-grown juvenile caught by a cat in a Clifton garden was brought along to an indoor meeting of the Section (JM) giving most members present their first sight of the species.

66. COMMON RAT (*Rattus norvegicus*). Records from eight 10 km squares, almost half were of road casualties. Several were shot in a Portishead garden.

67. BANK VOLE. Well over half the records received were of distinctively gnawed hazel nutshells. This is now accepted as reliable field evidence of the presence of dormice, wood mice and bank voles.

68. WATER VOLE. An adult with 3 half-grown young was seen in a rhine near Woodspring Priory on 15 June (TB).

69. FIELD VOLE. Field evidence found in several areas including runs under rough grass, and skulls in bottles.

86. PORPOISE. A corpse was recovered from Bridgewater Bay (RJGS). No further details are available at the time of writing.

The overall total of 31 species recorded throughout the year is consistent with the average number since 1970.

Records are still required, even common-place, recurrent ones, which help to build up a year-by-year picture of the overall local mammal situation. It is ludicrous, for instance, that the house mouse - questionably our commonest mammal - is probably the most under-recorded of all, with but three reported occurrences in 1976.

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LEPIDOPTERA NOTES

BRISTOL DISTRICT, 1976

BUTTERFLIES

By A.N. GROSE

1976 was a very good year for almost all species of butterfly. The hot summer brought many immigrants, including the Clouded Yellow and for the first time for many years the Pale Clouded Yellow.

Many of the more localised species have been seen in greater numbers than usual, including the Silver Washed Fritillary at Asham Wood. Regrettably most of this locality will be lost to quarrying, but the Somerset Trust for Nature Conservation have leased a small section. Two *Valesina* forms of the female were also found at this locality.

A large number of records of the White Letter Hairstreak were received despite the ravages of Dutch Elm Disease on the foodplant.

Altogether 42 species were recorded during the season including the Purple Emperor from South Gloucestershire (this has not been confirmed).

I am indebted to the nine members who submitted records. Only the less common species and those with discontinuous distribution have been included in this report.

WALL BROWN. Brean Down, 20 on 8 Jun; Compton Bishop, 10 Jun; Charterhouse, 8 on 11 Jun; Gr. Breach Wood, 8 on 27 Jul; Sand Point, 12 on 1 Aug; Filton, 10 on 13 Aug; Uphill, 2 on 25 Sep; Goblin Combe, 2 on 21 Aug; Black Dog Woods, 1 on 17 Jul; Durdham Down, 12 on 14 Aug; Saltford, 20 on 14 Aug; Dundry, 5 on 10 Aug; Arnos Vale, 4 on 4 Aug; Easter Compton, 3 on 3 Aug; Chittening, 1 on 4 Aug.

MARBLED WHITE. Abundant, new localities include:- Hanham Woods, 1 on 12 Jul; Colerne, 50 on 13 Jul; Black Dog Woods, 35 on 17 Jul; Pensford, 10 on 18 Jul; Westridge Wood, Wooton-U-Edge, 1 on 12 Jul; Queen Charlton, 1 on 29 Jun; Congresbury Moors, 11 Jul; Arnos Vale, 4 on 12 Jul.

GRAYLING. Brean Down, 1 on 26 Jun, 22 on 31 Jul; Sand Point, 15 on 11 Jul; Uphill, 21 Aug; Goblin Combe, 5 on 14 Jul.

RINGLET. Abundant, new localities include:- Hanham, 50 on 12 Jul; Colerne, 150 on 13 Jul; Black Dog Wood, 25 on 17 Jul; Asham Wood, 50 on 22 Jul; Blaise, 20 on 12 Jul; Blackpool Bridge, 20 on 21 Jul; Arnos Vale, 2 on 11 Jul; Lansdown, 1 on 28 Jun; Westridge, 12 Jul.

SMALL PEARL BORDERED FRITILLARY. Compton Bishop, 1 on 6 Jun; Charterhouse, 45 on 18 Jun; Goblin Combe, 12 on 3 Jul.

PEARL BORDERED FRITILLARY. Goblin Combe, 1 on 5 Jun; Colerne, 1 on 1 Jun.

DARK GREEN FRITILLARY. Brean Down, 20 on 26 Jun; Goblin Combe, 20 on 3 Jul; Sand Point, 1 on 11 Jul; Brockley Combe, 12 on 17 Jul; Colerne, 2 on 13 Jul; Black Dog Woods, 2 on 17 Jul; Providence, 2 on 10 Jul; Walton in Gordano, 2 on 25 Jul; Wains Hill, 2 on 8 Aug.

HIGH BROWN FRITILLARY. Congresbury, 5 on 14 Jul; Gt. Breach Wood, 10 on 22 Jul.

SILVER WASHED FRITILLARY. Haw Wood, 1 on 23 Jun; Goblin Combe, 4 on 3 Jul; Michael Wood, 7 on 6 Jul; Gt. Breach Wood, 6 on 27 Jul; Congresbury, 8 on 14 Jul; Brockley Combe, 25 on 25 Jul; Wetmoor, 14 on 15 Jul; Colerne, 6 on 13 Jul; Black Dog Woods, 41 on 17 Jul; Asham Wood, 150+ on 22 Jul; Leigh Woods, 2 on 11 Jul; Blackpool Bridge, 32 on 21 Jul; Providence, 3 on 10 Jul; Arnos Vale, 1 on 17 Jul; Sand Point, 1 on 24 Jul; Walton in Gordano, 6 on 25 Jul.

MARSH FRITILLARY. Charterhouse, 4 on 11 Jun and 12 on 18 Jun.

RED ADMIRAL. A good year. First sighting at Portishead in February or March (presumably a hibernated specimen); last at Chittening on 10 Nov.

PAINTED LADY. The best season for many years. Uphill, 1 on 9 Jun; Filton, 3 on 13 Aug; Chittening, 8 on 25 Aug; Saltford, 12 on 14 Aug; Bath, 4 on 14 Aug; Dundry, 1 on 10 Aug; Abbotts Leigh, 1 on 24 Aug; Gordano, 1 on 20 Jul.

COMMA. Seen in most localities in far greater numbers than usual.

WHITE ADMIRAL. Michael Wood, 8 on 20 Jul, 40 on 27 Jun; Wetmoor, 4 on 15 Jul; Black Dog Woods, 7 on 17 Jul; Gt. Breach Wood, 15 on 22 Jul; Asham Wood, 2 on 22 Jul; Blackpool Bridge, 4 on 21 Jul.

SMALL BLUE. Filton, 1 on May 26, 6 on 27 May; Uphill, 42 on 5 Jun, 25 on 8 Jun, 40 on 9 Jun, 2, in second brood, 31 Jul.

BROWN ARGUS. New localities include:- Congresbury, 4 Aug; Compton Bishop, 8 on 6 Jun; Haw Wood, 10 on 10 Aug; Gt. Breach Wood, 6 on 27 Jul; Colerne, 1 on 13 Jul; Black Dog Woods, 10 on 17 Jul; Pensford, 2 on 18 Jul; Saltford, 10 on 14 Aug; Dundry, 3 on 4 Aug; Arnos Vale, 2 on 6 Aug.

ADONIS BLUE. Near Street, 1 on 4 Sep.

CHALKHILL BLUE. Uphill, 17 on 17 Jul, 60 on 24 Jul; Gt. Breach Wood, 40 on 27 Jul; Brean Down, 2 on 31 Aug; Westridge Wood, 12 Jul.

HOLLY BLUE. Seen in many localities, including some from which it has been absent for many years.

GREEN HAIRSTREAK. Filton, 1 on 1 Jun; Charterhouse, 5 on 18 Jun; Dolebury Warren, 1 on 15 May; Priddy, 1 on 23 May.

PURPLE HAIRSTREAK. Michael Wood, 8 on 6 Jul; Haw Wood, 6 on 22 Jul; Gt. Breach Wood, 8 on 27 Jul; Filton, 1 on 12 Aug; Congresbury, 6 on 14 Jul; Brockley, 20 on 14 Jul; Goblin Combe, 1 on 14 Jul; Wetmoor, 1 on 15 Jul; Hanham Woods, 20 on 12 Jul; Colerne, 2 on 13 Jul; Black Dog Woods, 5 on 17 Jul; Asham Wood, 25 on 20 Jul; Leigh Woods, 10 on 26 Jun; Ashton Court, 4 on 10 Jul; Durdham Down, 40 on 11 Jul; Blaise, 20 on 12 Jul; Pensford, 1 on 18 Jul; Blakeney, 2 on 21 Jul; Blackpool Bridge, 25 on 21 Jul.

WHITE LETTER HAIRSTREAK. Goblin Combe, 1 on 13 Jul; Michael Wood, 8 on 12 Jul; Weston Woods, 1 on 26 Jul; Filton, 2 on 14 Jul; Brockley, 3 on 25 Jul; Gt. Breach Wood, 3 on 27 Jul; Wickwar, 2 on 15 Jul; Asham Wood, 3 on 22 Jul; Leigh Woods, 25 on 26 Jun; Clifton Suspension Bridge, 18 on 11 Jul; Durdham Down, 14 on 11 Jul; Blaise, 5 on 12 Jul;

Pensford, 4 on 18 Jul; Blakeney, 2 on 21 Jul; Soudley Pool, 13 on 21 Jul; Abbotts Leigh, 1 (fresh) on 1 Aug.

CLOUDED YELLOW. Several sighted on Somerset Levels on 7 Jun and during August.

PALE CLOUDED YELLOW. One sighted flying north in Avon Gorge, 26 Jun.

DINGY SKIPPER. Filton, 9 on 27 May; Crook Peak, 1 on 16 May; Goblin Combe, 5 on May 29; Sand Point, 1 on 23 May; Charterhouse, 1 on 18 Jun; Uphill, 2 on 14 Jun.

GRIZZLED SKIPPER. Filton, 3 on 2 Jun; Goblin Combe, 6 on 5 Jun; Filton, 1 on 24 Jun; Dolebury Warren, 2 on 15 Mayy.

MOTHS

By K.H. POOLE

This list has been compiled from records received from R. Angles (RA), C.S.H. Blathwayt (CSHB), J.F. Burton (JFB), R.W. Rowe (RWR), T.B. Silcocks (TBS) and A.I. Wright (AIW). All were single specimens unless otherwise shown, and those marked * were noted at light. *Amphipyra berbera* and *Oria musculosa* would appear to be the first records for the area.

Acherontia atropos L. (Death's-head Hawk), Pensford, 27 Aug, full grown larva in potato field (JFB). Cheddar, 31 Aug, several full-grown larvae in potato field (AIW).

Herse convolvuli L. (Convolvulus Hawk), Ubley, 23 Aug (AIW).

Sphinx ligustri L. (Privet Hawk), Brean Down, 18 July, full grown larva crossing road (RA).

Macroglossum stellatarum L. (Humming-bird Hawk), Weston-s-Mare, several June-Oct (RA & CSHB). Uphill, 26 June, 3 July; Filton, 9 Aug (RA). Clevedon, several 14 Aug (JFB). Upper Langford, 5 Sept (AIW).

Spilosoma urticae Esp. (Water Ermine), Shapwick, 25 June* (CSHB).

Arctia villica L. (Cream-spot Tiger), Sand Point, 5 June (TBS). Shapwick, 4 June* (KHP).

Graphiphora augur Fab. (Double Dart), Milton, Weston-s-Mare, 5 July* (KHP).

Amathes glareosa Esp.(Autumnal Rustic), Charterhouse, 3, 7 Sept (CSHB).

Eremobia ochroleuca Esp. (Dusky Sallow), Weston-s-Mare, several, July-Aug* (CSHB).

Oria musculosa Hubn. (Brighton Wainscot), Milton, Weston-s-Mare, 5 July* (KHP).

Stilbia anomola Haw. (Anomalous), Charterhouse, 3 Sept (CSHB).

Amphipyra berbera Fletch. (Dark Copper Underwing), Weston-s-Mare, 7 Aug* (CSHB)

Sterrha dilutaria Hubn. (Silky Wave), Clevedon, 27 Aug* (JFB).

Pelurga comitata L. (Dark Spinach), Weston-s-Mare, 25 July* (CSHB).

Eupithecia arceuthata Frey. (Edinburgh Pug), Weston-s-Mare, a few in June* (CSHB). Milton, Weston-s-Mare, 7 July* (KHP).

Anticollix sparsata Treits. (Dentated Pug), at dusk, Shapwick, 25 June (CSHB).

Chiasmia clathrata L. (Latticed Heath), Filton, common, spring-early summer (RA).

Phlyctaenia crocealis Hubn., Milton, Weston-s-Mare, 11 July* (KHP).

Pyrausta nigrata Scop., Sand Point, Kewstoke, 24 July (TBS).

Mecyna asinalis Hubn., Milton, Weston-s-Mare, 15 July* (KHP).

Crambus selasellus Hubn., Clevedon, *Spartina*, Saltings, 28 Jul (JFB).

Further additions to the Congresbury list (RWR) are *Callimorpha jacobaeae* L. (Cinnabar), *Eilema lurideola* Zinck. (Common Footman), *Xylophasi monoglypha* Hufn. (Dark Arches), *Phlogophora meticulos* L. (Angle Shades), *Leucania impura* Hubn. (Smoky Wainscot), *Calothysanis amata* L. (Blood Vein), *Laspeyresia pomonella* L.

NOTES ON SOME INVERTEBRATES ON STEEP HOLM

By A.J. PARSONS

The invertebrates of the island of Steep Holm are likely to be of interest for a number of reasons, which include:

1. The presence of species associated with the unusual vegetation.
2. Carrion-associated species, in respect of the large gull colony and its associated mortalities.
3. Parasites, of particular interest in respect of the breeding seabirds and of migrating passerines.
4. The presence (or absence) of flightless species on the island raises speculation as to their origins and might provide base-line data regarding future introductions and occurrences.
5. Migration and dispersal; these are notoriously difficult to monitor, but opportunities arise on a small island where the level and variety of indigenous populations can perhaps be established more readily.

A number of papers describing the unusual vegetation of Steep Holm have been published. Papers presenting a classification of the vegetation (Bridgewater, 1968; 1971) give a good description of the recent situation, and further details of the habitat can be found in the reports of the 1938 survey (Smith, 1939; Skene, 1939). Poulding (1968) gives a particularly useful brief account of the topography of the island.

Previous published records of invertebrates from Steep Holm are limited and scattered. The spiders are covered by Chase (1969; 1971; 1972) and further records not included by Chase occur in Cowley (1954a). The terrestrial Isopoda are covered by Boyd (1949). A paper by Smith (1972) details the records of Diptera up to 1956, but excludes some records by Parnell (1939). Other invertebrates were recorded by Thomas (1884), Knight (1902), Pearcey (1915), Griffiths and Bartlett (1915), Hamilton (1939), Yonge and Lloyd (1939), Cowley (1954b; 1955; 1956; 1957; 1958), Anon (1958), and Gillard (1969).

The purpose of the present paper is to record the occurrence, with notes on the present status, of some species of Mollusca, Isopoda, Chilopoda, Acarina and Insecta. Nine visits, totalling 32 days, were made to the island during the period September, 1975, to December, 1976. A part of each visit was devoted to the collecting of specimens and noting of recognisable species. There appear to be no published records of 68 of the species recorded.

One problem which arises on a small island, particularly where species not immediately recognisable are concerned, is that of determining the status of the species without excessive collecting. A conscious effort has been made to avoid this, hence the comments on the status of some species must be regarded as tentative.

The importance of island records in the case of many flightless invertebrates lies in the presumption that, in the absence of artificial introduction, the species must have existed there before the island became separated from the mainland. This is probably true for many such species on Steep Holm, but such presumptions should be qualified since the introduction of some species in the organic material brought to the island by gulls cannot be ruled out entirely. Accidental introduction of some species by man, particularly during the periods of military occupation when large quantities of building materials and stores were transported to the island, is also a possibility.

Species for which no previous published record has been found are marked with an asterisk.

MOLLUSCA

Arion hortensis Ferrusac. Moderately common and widespread.

**Milax budapestensis* (Hazay). Moderately common, primarily on the plateau.

Agriolimax reticulatus (Müller). Moderately common and widespread.

In the light of present knowledge, the record of *Agriolimax agrestis* (Linn.) from 1914 (Pearcey, 1915) should be regarded as doubtful until confirmed, probably relating to *A. reticulatus*.

ISOPODA : Oniscoidea

Ligia oceanica (Linn.). Moderately common in suitable areas, particularly the rock ledges of the south coast, and the area immediately above the east landing beach.

Philoscia muscorum (Scopoli). Moderately common in a few areas.

Oniscus asellus Linn. Very common and widespread.

Porcellio scaber Latreille. Very common and widespread. The commonest species in 1976. 140 were found in a disused Greenfinch's nest.

Armadillidium vulgare (Latreille). Very common and widespread.

**Androniscus dentiger* Verhoeff. Only found so far beneath plants of *Parieteria diffusa* close to the barracks, but abundant where it occurs.

In the light of present knowledge, several of Boyd's records need confirming. *Trachelipus ?ratzeburgi* (Brandt), *Armadillidium pictum* Brandt and *A. pulchellum* (Zencker) are now believed to be very rare species and these records, in common with pre-1953 records from other areas, must be considered doubtful.

CHILOPODA

A fairly thorough search of likely habitats has so far produced five species of centipede. The extremely dry summer of 1976 resulted in a paucity of records during June to August, when most individuals were found in the magazines of the Victorian gun batteries (below ground level) or in the soil of the sycamore wood. The greatest number of individuals were found in September to December, when four of the five species were common.

Geophilomorpha

**Haplophilus subterraneus* (Shaw). Common and widespread.

**Necrophloeophagus longicornis* (Leach). Only found in the soil of the sycamore wood, and only in small numbers.

Scolopendromorpha

**Cryptops hortensis* Leach. Common and widespread.

Lithobiomorpha

**Lithobius variegatus* Leach. Common and widespread.

Lithobius forficatus (Linn.). Extremely common and widespread. This species was recorded by Pearcey (1915) and Hamilton (1939). In May, 1914, it was "moderately common in suitable places".

ACARINA

Ixodoidea

**Ixodes frontalis* Panzer. During the above-mentioned period, 475 passerines were trapped for ringing. Of these, approximately 350 were specifically examined for ticks. Ticks were only found on 4/60 Blackbirds, 2/17 Song Thrushes and 1/52 Starlings, and all were *I. frontalis*. One Blackbird was carrying eight ticks on the head, which is a high number (Barnet, pers. comm.).

Trombidiformes

Trombicula autumnalis (Shaw). Hamilton (1939) noted this species, and Poulding (1963) recorded the prevalence of the larvae on Dunnocks. In August and September, 1976, all birds trapped were examined for the mite, and all Dunnocks, Blackbirds and Song Thrushes, and several Starlings, were found to be carrying numbers of larvae, as were several Rabbits, a Hedgehog and several humans. It was extremely difficult to assess the numbers carried by individual birds, but close-up colour photography of one Dunnock showed over 400 mites between tail and cloaca alone. Examination of known migrants provided no records of the mite.

INSECTA

Thysanura

**Thermobia domestica* (Packard). One specimen in the barracks, 23 August 1976 - rather unexpectedly, since the species prefers artifically heated buildings. Recent accidental introduction cannot be ruled out.

Odonata

From the 22 to the 29 August, 1976, up to 20 dragonflies were present on the island daily. It is difficult to assess numbers but at least six *Aeshna* sp. and at least six *Sympetrum* sp. were present on most days. Further *Sympetrum* sp. were noted on several dates up to the 9 October.

**Aeshan juncea* (Linn.) All *Aeshna* sp. examined in the hand and all recognised in the field were of this species.

**Libellula quadrimaculata* Linn. Mr. C. Cornell recorded this species in September, 1974 (pers. comm.). None were noted in 1976, although unconfirmed sight records for 1975 suggest that the species occurred in August of that year.

**Sympetrum striolatum* (Charpentier). All *Sympetrum* sp. examined and recognised were of this species.

There is no breeding area on the island and the dragonflies must have travelled a minimum of 7 km and probably at least 9 km, since their observed movements on the island were from NW to SE. There is no reason to suppose that these records are other than normal long distance dispersal movements, categorised by Moore (1960) as migration or emigration.

In the published account of the records of Odonata in the old county of Somerset (Keylock, 1972) there are no records for Steep Holm. *A. juncea* is referred to as "locally frequent" having occurred in only five of the 63 ten kilometre squares in the county, whereas *L. quadrimaculata* is "common" (14 squares) and *S. striolatum* is "widespread and abundant" (26 squares).

Orthoptera

**Pholidoptera griseoaptera* (De Geer). Common and widespread, often entering the barracks in autumn.

**Leptophyes punctatissima* (Bosc). Moderately common, and widespread.

Dermaptera

Forficula auricularia Linn. Moderately common, and widespread. Recorded in 1914, and in 1938 as "common".

Psocoptera

**Graphopsocus cruciatus* (Linn.). Reasonably common on *Sambucus nigra* in September, 1976.

Hemiptera : Heteroptera

**Acanthosoma haemorrhoidale* (Linn.). This conspicuous species was only noted on one date, 9 October 1976, when two males and one female were present on a mist net.

There are a small number of *Crataegus monogyna* on the island.

**Troilus luridus* (Fabricius). One specimen was taken (on a mist net), 25 August 1976. No other specimens of this conspicuous species were noted.

**Heterogaster urticae* (Fabricius). One specimen was taken on *Conium maculatum*, 4 April 1976.

**Anthocoris confusus* Reuter. Small numbers present on *Acer pseudoplatanus*, August 1976.

**Anthocoris nemorum* (Linn.). Very common and widespread.

**Orius laevigatus* (Fieber). One specimen taken, 26 August 1976, at some three metres from plants of *Verbascum thapsis*, a known host species. Search of the plants failed to produce any more.

**Orius niger* (Wolff). Common, but local, specimens only having been taken from flowers of *Dipsacus fullonum*.

**Liocoris tripustulatus* (Fabricius). Abundant in August 1976, on *Urtica dioica*, *Parieteria diffusa*, *Senecio jacobaea*, *Arctium minus* and *Ligustrum vulgare*.

**Lygocoris pabulinus* (Linn.). One specimen was taken on *Conium maculatum*, 4 January 1976.

**Nysius thymi* (Wolff). Several on *Cirsium arvense*, 25 August 1976.

Hemiptera : Homoptera

**Philaenus spumarius* (Linn.). Very common, particularly on *Sambucus nigra*, *Acer pseudoplatanus* and *Hedera helix*.

Neuroptera

**Hemerobius humulinus* (Linn.). One taken on *Acer pseudoplatanus*, 23 August 1976. One dead in barracks, 7 October 1976.

**Kimminsia subnebulosa* (Stephens). Two taken on *Acer pseudoplatanus*, 23 August 1976. Several others, apparently of this species, were noted. Probably fairly common.

**Chrysopa carnea* Stephens. Very common, particularly at the eastern end of the island.

**Chrysopa flavifrons* Braür. One taken on *Acer pseudoplatanus*, 25 August 1976. Debris-coated larvae (hence not of *C. carnea*) were common and may be those of *C. flavifrons* or another species.

Lepidoptera

Pieridae

Pieris brassicae (Linn.). Abundant in September 1975, with 50 to 100 present on several dates. A number of larvae were found (on *Brassica rapa* ssp. *campestris*). Surprisingly, the species was infrequent in 1976. One female was noted laying eggs on *Reseda luteola*.

Pieris rapae (Linn.). Abundant in September 1975, with an estimated 500+ present on 15 and 16 September. Small numbers only were present in 1976.

Lycaenidae

Lycaena phlaeas (Linn.). One captured and released 21 August 1976.

Polyommatus icarus (Rottemburg). Single individuals in June, July and August 1976.

Nymphalidae

Vanessa atalanta (Linn.). Very common in 1975 and 1976. Several viable pupae were found.

Cynthia (=Vanessa) cardui (Linn.). Single individuals on four dates in September 1975, and one on 9 October 1976.

Aglais urticae (Linn.). Very common in the September of 1975 and 1976. Breeding was not proved, although pairs were noted *in cop.*

Inachis io (Linn.). Not noted at any time on the wing, and no larvae or pupae were found, but in September 1976, 11 individuals were in hibernation in the underground magazines of the gun batteries.

Satyridae

**Pararge aegeria* (Linn.). Two present, 13 September 1976, in the sycamore wood.

**Lasiommata megera* (Linn.). One, 15 September 1975. Noted on five dates in August 1976, with a maximum of four on any one date.

Maniola jurtina (Linn.). One, July 1976.

Lasiocampidae

Malacosoma neustria (Linn.). Several larvae present on *Rubus fruticosus*, 20 June 1976. No adults were detected.

Geometridae

**Philereme transversata* (Hufnagel). Common in late August 1976.

**Aplocera (=Anaitis) plagiata* (Linn.). One captured and released, 24 August 1976 at the barracks. No *Hypericum* spp., the larval food plants, were found in 1976.

Noctuidae

Noctua pronuba (Linn.). One dead in barracks 14 September 1975. One captured and released 26 August 1976.

**Mythimna (=Leucania) pallens* (Linn.). One in barracks, 27 August 1976.

Plusia gamma (Linn.). Abundant in September 1975; very much more so than could be accounted for by breeding on the island, although a small number of larvae were found. A few were noted in autumn 1976, but the species could only be referred to as infrequent during this period.

Scoliopteryx libatrix (Linn.). Noted only in the underground magazines, where five were present on 19 September 1976 and 5 December 1976.

Diptera

Culicidae

**Culiseta annulata* (Schrank). Moderately common around (and in) the barracks in August 1976. Several hundred were present in the underground magazines, 5 December 1976.

**Culex pipiens* Linn. Common, primarily in the underground magazines where some 2,000 were present on 5 December 1976.

No likely breeding habitat for these two species exists on the island (the underground reservoir having produced no evidence).

Bibionidae

Dilophus febrilis (Linn.). Moderately common in summer and very common in autumn.

Scatopsidae

*Scatopse notata (Linn.). One male taken in the barracks, 21 August 1976.

Stratiomyidae

*Chloromyia formosa (Scopoli). One female taken at Conium maculatum, 4 July 1976.

Syrphidae

Syrphus ribesii (Linn.). Moderately common, June and July 1976, particularly at *Conium maculatum*.

*Syrphus vitripennis Meigen. Moderately common, June and July 1976, particularly at Conium maculatum.

*Scaeva (=Catabomba) pyrastri (Linn.). Single individuals frequent, but not common.

*Dasysyrphus albostriatus (Fallen). One male taken in the barracks, 26 August 1976.

*Episyrphus balteatus (De Geer). Common and widespread, abundant on occasions.

*Platycheirus clypeatus (Meigen). One male taken at Conium maculatum, 4 July 1976.

*Eristalis tenax (Linn.). Common and widespread.

*Eristalinus aenus (Scopoli). Common, and particularly so at Limonium binervosum.

It is probable that many of the syrphids were immigrants. On 4 July 1976, syrphids were abundant on the south-east shore of the island, and over the sea. Very many of these were *E. balteatus*, and most of the remainder were *S. ribesii*, with probably some *S. vitripennis* present, (although no specimens were taken of this species at this time). At least 2,000 individuals must have been present during two hours of the afternoon. Several *E. balteatus* landed on the boat on the return journey, some at more than 2 km from the island.

Tephritidae

Euleia heraclei (Linn.). Common at the eastern end of the island.

Coelopididae

**Coelopa frigida* (Fabricus). Very common on *Acer pseudoplatanus* in July and August.

Lonchaeidae

Lonchaea flavidipennis Zetterstedt. Very common at the eastern end of the island. All examined so far are this species, although *L. chorea* was recorded in 1914, and in Charbonnier (1919).

Sarcophagidae

Sarcophaga nigriventis Meigen. Moderately common.
Sarcophaga vicina Rohdendorf. Common.

Both these species, with two others (*S. teretirostris* Pandelle and *S. dissimilis* Meigen) were recorded in 1956 (Smith, 1972).

Calliphoridae

**Calliphora vicina (=erythrocephala)* Robineau-Desvoidy. Abundant during the summer, frequently a nuisance. 35 were taken in the barracks, 27 August 1976.

Calliphora vomitoria (Linn.). Scarce. Only six specimens were taken, in September 1975 and October 1976. Two of these were in the barracks, the others from carcases and vegetation.

Lucilia caesar (Linn.). Apparently scarce. Five males were taken in September 1975 and one female in September 1976.

Lucilia sericata (Meigen). Hyperabundant in summer. Without doubt the most numerous fly. Over 100 were taken in the barracks, 27 August 1976, and all but one of the *Lucilia* sp. taken in 1976 were of this species.

Anthomyiidae

**Anthomyia pluvialis* (Linn.). Very common in the south and east of the island, mainly during July and August.

Fanniidae

**Fannia canicularis* (Linn.). Moderately common, particularly around the taller scrub.

Muscidae

**Orthellia viridis* (Wiedemann). One male taken on low vegetation, 24 August 1976. (It would be relatively easy to overlook this species amongst the abundant *L. sericata*).

Musca domestica Linn. Rather scarce. A few specimens were taken at various times, but never more than three on any one day, mostly in the barracks.

**Hydrotaea irritans* (Fallen). One female taken on low vegetation, 22 August 1976.

**Hebecnema umbratica* (Meigen). One male taken in the barracks, 21 August 1976.

**Haematobia (=Lyperosia) irritans* (Linn.). In August 1976, a number of this species were present and eight were taken. This small biting fly is normally very closely associated with cattle and it is assumed that the individuals were were windborne. The species was exceptionally abundant on the mainland in 1976. On Steep Holm, they seemed to be confined to the central (exposed) part of the island, and individuals settled in small numbers on passers-by, biting at times, which is not normal where the preferred host is present.

Hippoboscidae

**Ornithomyia avicularia* (Linn.). Common, particularly on Blackbirds and Starlings.

**Ornithomyia fringillina* Curtis. One taken from a Meadow Pipit, 8 October 1976, and one from a Wren on the same date.

Griffiths and Bartlett commented on the paucity of Diptera at the end of May 1914, following several weeks of cold weather and when the numbers of seabirds were relatively low. One would have expected rather more flies to have been present at the July visit of 1938, but Parnell also indicated low numbers.

Siphonaptera

**Spilopsyllus cuniculi* (Dale). Specimens were taken from several recently dead rabbits. The occurrence of the species had already been assumed from the presence of myxomatosis, the flea being the vector.

**Ceratophyllus g. gallinae* (Schrank). One specimen was taken from a Dunnock, 22 August 1976.

Hymenoptera

Ichneumonoidea

**Apanteles glomeratus* (Linn.). One larva of *Pieris brassicae* parasitised by, and a pupa of this species was taken on 20 September 1975.

Formicoidea

Formica fusca Linn. Abundant and widespread.

**Formica lemani* Bondroit. One nest found, 2 October 1976, with a large number of alate queens present.

Lasius alienus (Foerster). Abundant, and particularly so on *Parieteria diffusa* and *Verbascum thapsis*.

Lasius niger (Linn.). Abundant in the barracks on occasion.

Parnell commented on the abundance of ant colonies and recorded six species. Unfortunately, Collingwood and Barrett (1964) excluded two of the 1938 records (*Formica sanguinea* Latreille and *Lasius brunneus* (Latreille)) from the relevant vice-county records, these being unsupported by specimens. Neither species had been recorded from anywhere else in Somerset, or from Glamorgan.

Apoidea

**Bombus terrestris* (Linn.). One queen, 18 September 1975 was the only record of a bumble-bee.

Coleoptera (These few records are largely incidental; very little work was done on this order)

Carabidae

Carabus violaceus Linn. Moderately common and widespread.

Nebria brevicollis (Fabricius). One under old masonry, 19 September 1976.

**Abax parallelepipedus* (Piller and Mitterpacher). One above landing beach, 5 October 1976.

Staphylinidae

Staphylinus olens (Müller). Very common and widespread.

Lagriidae

**Lagria hirta* (Linn.). One, at roots of *Sambucus nigra*, 5 October 1976.

Coccinellidae

**Coccinella septempunctata* Linn. Generally abundant. On 4 July 1976 vast numbers were present all over the island, and floating rafts of them were passed continually between the island and the mainland. Although larvae and pupae were very common on Steep Holm, they were not so abundant as to explain the presence of such vast numbers of adults. It is therefore probable that the explanation lies in the massive immigration noted on other parts of the coast during the summer.

**Coccinella undecimpunctata* Linn. Infrequent, on *Ligustrum vulgare*, in July and August 1976.

**Adalia decempunctata* (Linn.). One taken on *Acer pseudoplatanus*, 23 August 1976.

Chrysomelidae

**Sphaeroderma testaceum* (Fabricius). Present in several areas on *Cirsium vulgare*.

Curculionidae

**Apion urticarium* (Herbst). One on *Urtica dioica*, 26 August 1976.

Cidnorhinus quadrimaculatus (Linn.). Common on *Urtica dioica* in August 1976.

From the records of insects from Steep Holm published so far, two points become obvious. Firstly, the prevalence of carrion-associated insects, particularly Diptera, and Coleoptera, which was commented on by Parnell and which is probably even more marked now. Secondly, the passage of insects through the area, in particular species of Odonata, Diptera, Lepidoptera and Coleoptera.

Much further work needs to be done on the invertebrates, not least to rediscover *Ectobius panzeri* Stephens (Dictyoptera), which was recorded from Steep Holm in 1938 but has not been recorded from anywhere else within 80 km. There is need, also, to confirm the sepsid fly *Nemopoda nitidula* (Fallen) (=*cylindrica* Fabricius) which was assumed by Smith (1972) to be the species referred to as '*Nematobia cylindrica*' by Griffiths and Bartlett. Smith's assumption is the logical one, but the name '*Nematobia cylindrica*' also appears in the list of Diptera recorded by Parnell, and the repetition of such a spelling mistake makes one wonder whether the originally recorded species should be regarded as a *nomen dubium* at present. It has not been possible to find the original specimens, and no members of the Sepsidae were encountered during the present survey.

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J.L. KNAPP'S 'GRAMINA BRITANNICA' - ITS LOCAL INTEREST

By P.J.M. Nethercott

John Leonard Knapp (1767-1845) was born at Shenley, Bucks, but much of his life was lived in the Bristol area. Continuous detail seems unobtainable although his obituary in The Gentleman's Magazine is a valuable source (and is used here). In 1793 Knapp, as an officer of the Herefordshire Militia, took part in the suppression of the Bristol Bridge riots, in 1804 he was living in Bath and from 1813 onwards, probably permanently to his death, at Alveston. He is remembered today for his book *The Journal of a Naturalist*, first published in 1829 and which reached a fourth edition in 1838. Gilbert White's *The Natural History of Selborne* is mentioned in the Preface and evidently inspired the scope of the book which comprises a series of chapters on country-life, botany and general natural history centred on the Parish of Alveston and is illustrated by woodcuts and plates. J.W. White in his *Flora of Bristol* (1912) quotes long passages of his observations on the local gathering and commercial use of dyer's broom (*Genista tinctoria L.*) and the cultivation of the teasel (*Dipsacus fullonum L.*).

Knapp's other principal work, *Gramina Britannica* or *Representations of the British Grasses*, although noticed in White's biographical note of Knapp, is not included in White's bibliography and nothing is quoted from it in the Gramineae section of his *Flora*. The present account is intended to show the local interest of this book.

Gramina Britannica is the first major work illustrated with coloured plates devoted exclusively to the British grasses. It was first published in 1804 but the stock of this edition (except a hundred copies in the binder's hands) was destroyed by fire at the printer's office. This disaster is alluded to in his poem The Progress of a Naturalist

> "Ah, Vulcan! that thy hateful rage
> Should moulder half his studious page"

A second edition appeared in 1842.

The work is a large quarto volume describing 109 species and varieties of British grasses, the illustrations on the left and the text on the right each occupying a page. Knapp travelled very widely in Britain, personally collected most of the grasses described and prepared the drawings. The second edition reproduces the same plates (omitting the plate of *Briza aspera*) but, although in the preface to the second edition Knapp stated it to be in great measure a transcript from the earlier work, the textual differences are not slight. The nomenclature of the grasses is also revised to some extent, a few English names are altered and the order of the plates and text varied to accord with this revision. No reference is made to grasses added to the British list between the two editions.

The first feature of local interest relates to the production of the two editions. At the time of the publication of the first edition, Knapp was residing in Bath, as appears from the preface. His residence in various parts of the country is mentioned in The Gentleman's Magazine, but Bath is not included. The Bath directories of 1800 and 1805 show a John Knapp resident there although it cannot be said certainly that the entries refer to him. In the first edition almost all the plates show as the engravers either J. Hibbert, Bath or R.P. Nodder (a few are unsigned). The standard dictionaries of painters and engravers state J. Hibbert was an engraver and lithographer (one of a family engaged in this and related artistic pursuits) working in Bath. Nodder does not appear to have any Bath connexion. The number of plates engraved by Hibbert was 45. John Hibbert was the son of William Hibbert, who etched the plates in another local botanical work, Sole's *Mentha Britannicae* (1798).

The first edition was printed in London for the author by T. Bensley. The second edition was published by W. Strong, Bristol and Longman & Co., Paternoster Row. The text of the second edition was printed by J. Chilcott, Wine Street, Bristol and the plates by Jefferies, Bristol. The plates of the first edition are finely engraved and hand-coloured but the lithography and colouring in the second edition are inferior.

The second feature of interest concerns local botanists and appears in the first edition only. A page is devoted to acknowledging by name the assistance of other botanists, the local names appearing herein being "...Thomas Velley, Esq., ...the late Mr. Sole, Bath... (and) Rev. Mr. Swayne...". There is also an extended note about William Sole (who died shortly before in 1802) which is both amusing and critical (but too long to quote fully). It appears that Knapp considered Sole rather old-fashioned, admiring greatly the Bauhins and well acquainted with the system of Ray, but that of the Linnean system Sole knew little. Writing of Sole's herbarium, Knapp stated it to be replete with varieties, elevated to the rank of species: "examining one day with a magnifier the nice distinctions on the calyx valves of a species of *Agrostis*, which was apparently placed wrong, 'Ah! you botanists of these days', exclaimed the deceased, 'do nothing without your glass, we always knew a plant at sight, without such inspections'. And might not that be the reason, sir, for the many errors?"

Site records of our area, as appearing in the two editions make the third and principal feature of local interest, although it has to be confessed that these notices are very few. In the first edition there are four.

(1) *Koeleria cristata* (L.) Pers. (as *Aira cristata*) is recorded thus "upon the Tor hill, at Wells, Somersetshire it is found in great profusion". The second edition locates the Tor Hill at Glastonbury. There is a Tor Hill at Wells distinct from the Tor Hill at Glastonbury. A visit to both hills revealed a little *Koeleria* at Wells but this grass was not observed at Glastonbury. The grassland composition of both hills is now probably much modified compared with the first half of the nineteenth century.

(2) *Puccinellia rupestris* (With.) Fern. & Weath. (as *Poa procumbens*). "It is abundant at Pill, below the Bristol hot wells, and upon the margins of the marsh ditches we have seen it a foot high": in the second edition, under *Glyceria procumbens,* the text is extended, "but near the river, by the Hotwells, where it is found again, it is of a more humble stature". This rather rare grass was first recorded in Britain by W. Curtis in 1793, "at the foot of St. Vincent's Rock, Bristol", (as *Poa procumbens*). This grass is much diminished now and, although it can be seen very sparingly at Pill, has not been reported from the Avon Gorge for many years.

(3) *Brachypodium pinnatum* (L.) Beauv. (as *Festuca pinnata*). In the first edition this grass is described as an inhabitant of dry calcareous and stony counties and the "road between Oxford and Cirencester" is cited. The second edition adds "...and (in) the Cotswold Hills generally, it is profusely dispersed". The grass is widespread in the Cotswolds today.

(4) *Bromus erectus* Huds. "... is far from being a general plant but is not uncommon in some places; upon the dry stony hills and in the rough fields of Wiltshire and Somerset it is frequently met with...". The second edition adds Gloucester(shire) and correctly observes the grass as

"apparently preferring any under stratum of carbonate of lime or lias". This grass remains widespread in our area on suitable soils.

The second edition contains a fifth record.

(5) *Bromus madritensis* L. (as *Bromus diandrus*). To the localities mentioned in the first edition is added, "...also under the crags of St. Vincent's rocks, Bristol". This is not a first local record for this rare grass which was first reported (as *Bromus tectorum*) by Banks and Lightfoot on their Bristol visit in 1773. The early writers usually treated the whole of the Avon Gorge as St. Vincent's Rocks so it is not possible to pin-point Knapp's locality. The grass survives on both sides of the Gorge in a few spots, but not in the quantity indicated by White in his time.

In neither edition does Knapp give local records for such present-day rarities of our area as *Gastridium ventricosum* (Gouan) Schinz and Thell., *Alopecurus bulbosus* Gouan, *Hordeum marinum* Huds. and *Hordelymus europaeus* (L.) Harz, although he describes and illustrates these grasses and mentions other British localities.

A copy of the first edition of *Gramina Britannica* may been seen in the Bath Central Library.

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2. To ensure consideration for inclusion in the next issue, contributions must be received not later than February 28th.

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"Rerum cognoscere causas"—Virgil

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Frontispiece: photographs of dragonflies by S.P. Nicholls
(see article on p. 105).

ORTHETRUM COERULESCENS - a local species of open, boggy ground.

SYMPETRUM STRIOLATUM - an adult emerging from the larval case.

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REPORT OF COUNCIL

Membership at the end of the year stood at 754, including 29 juniors. There are 8 affiliated societies. At the Annual General Meeting the officers and members of Council were elected with Mr D. Hamilton continuing as President.

The annual supper was held in March with Dr R. Savage as guest speaker on 'Journey to the Jade Sea'.

Council had been concerned with the lack of contact with Steep Holm following the demise of the old Steep Holm Trust and the formation of the Kenneth Allsop Memorial Trust. It is glad to report that through the conservation committee a good relationship has been restored.

Council are glad to report that under certain conditions members can visit Flat Holme.

Council wish to record their appreciation of the work of their members, who assemble and deliver the Monthly Bulletin. Their effors represent a considerable financial saving to the Society.

We regret to announce the deaths of:

Mr F.R. Sterne (Past President)
Mr Flook
the Hon. Judge G.A. Forrest
Professor H.E. Hinton

AUDREY HECKELS *Hon. Secretary*

REPORT OF THE CONSERVATION COMMITTEE, 1977

A Bristol City Job Creation Project to establish a firm walkway along the bank of the River Avon from Pill to Rownham was considered with some anxiety. Rare botanic species indigenous to this part of the Gorge, within an S.S.S.I. and a National Nature Reserve, would be at considerable risk from increased pedestrian usage, as well as from actual maintenance and construction works. Talks between ourselves, the Nature Conservancy Council and the City Planning Department resulted in a satisfactory compromise, such as minimal maintenance supervised by the Nature Conservancy Warden, fencing off the old quarry entrances, the proposed waymarking of reduced and alternative routes at either end of the Gorge.

A natural history survey of the Westbury Trym and Henbury Trym rivers with their associated valleys has been completed. The County Planning Landscape and Conservation Section has a need for such surveys in order to establish the ecological value of Avon's waterways. Copies have also been sent to Wessex Water Authority, Bristol City Engineer and Bristol Civic Society. The latter are campaigning for tree planting, and our report also stresses the urgent need for good woodland management.

An old disused quarry at Winterbourne Down has been recommended as a nature reserve, particularly for bird life. It may be accepted by the Gloucestershire Trust for Nature Conservation.

Liaison has continued with the Steep Holm Kenneth Allsop Memorial Trust and a code of practice established which is intended to prevent unauthorised introductions and alterations to the ecology of the island.

The proposals for a natural history information room at Ashton Court are in abeyance due to current financial restrictions, however a small display has been provided in the vaulted hall as an interim measure.

Co-operation with the Severn Estuary Committee continues and it is hoped that a booklet concerning the wild life of the estuary will soon be published. Liaison with the Avon County Planning Conservation Section, the Nature Conservancy Council and the County Trusts has continued, and guidance given to Job Creation Teams that have been making ecological surveys in Avon and Gloucestershire and the Mendip Hills A.O.N.B. Sites of natural history interest throughout Avon are being listed by the County Planning Section for inclusion in the County Structure Plan and we are providing much of the information.

K.T. BATTY, *Chairman*

REPORT OF BOTANICAL SECTION, 1977

At the Annual General Meeting the following were elected:- President: Dr A.F. Devonshire. Secretary & Treasurer: Miss I.F. Gravestock. Committee: Dr T.E.T. Bond, Mrs C.H. Cummins, Mrs Vaughan Davies, Mr A. Grenfell, Mr C.H. Hurfurt, Mr P.J.M. Nethercott, Mrs P.H. Royle, Mrs T.B. Silcocks and Dr M.C. Smith.

Winter meetings were:-

January 24:	Annual General Meeting and Members' Evening.
February 28:	Some early plants of the Eastern Dolomites by Mr C.H. Cummins.
March 14:	The use of micro-organisms in the control of tree diseases by Dr A.T. Corke.
October 24:	Members' evening, with transparencies.
December 5:	Herbals and British Floras by Dr M.C. Smith.

Field Excursions were as follows:-

March 26:	Leigh Woods. Mr P.J.M. Nethercott.
April 30:	Alpine Garden at Grovesend, Thornbury. Dr M.C. Smith.
May 28:	Mounton Valley, Gwent. Mr C.H. Cummins.
June 11:	Wavering Down and Crook Peak. Mr P.J.M. Nethercott.
June 25:	Sand Point. Mrs T.B. Silcocks.
July 12:	Brandon Hill. Dr A.F. Devonshire.
July 23:	Hatchet Pond and environs. Mr A. Grenfell. Abundance of rare and interesting spp. seen, including *Hammarbya paludosa, Cuscuta epithymum, Galium debile, Hypericum elodes, Cicendia filiformis, Radiola linoides, Illecebrum verticillatum, Pinguicula lusitanica, Utricularia minor, Ludwigia palustris,* and *Pulicaria vulgaris.*
August 2:	Practical exercises in identifying wild flowers at Bracken Hill. Dr M.C. Smith.
August 9:	Kingsweston old rubbish tip. Miss I.F. Gravestock.
September 17:	Pucklechurch and Doynton. Mr C.H. Hurfurt.

October 8: Fungus foray to Westonbirt, with the British Mycological Society. Dr T.E.T. Bond.

I.F. GRAVESTOCK, *Hon. Secretary*

REPORT OF ORNITHOLOGICAL SECTION, 1977

During 1977 nine indoor meetings were held, with an average attendance of 50. The two most popular were the film evening in March, and Colin Tubbs on 'The Buzzard' in November, both of which attracted a full house of 100. The success of the Beginners meetings of the previous year led to their being repeated in a slightly different format in 1977.

Twenty two Field Trips were planned, and twenty one took place, though one coach trip was cancelled due to lack of support. Most of the outings were well attended, except for those designed to find Buntings in the summer.

In the course of the year the section contributed to a wide variety of local and national surveys, including the national Golden Plover survey, the final year of the Ornithological Register, the Nest Record Card Scheme and a breeding Black Redstart survey. It carried out a number of surveys of its own, an important new one being on Bunting distribution in Avon county, and continued examining the status of House Martins and Kestrels in Bristol, the Birds of the Tidal Avon, Birds in Gardens in Winter, and keeping an eye on overwintering warblers. It also repeated the 1976 Nightingale survey to check its accuracy. A Fieldwork review was published in the course of the year covering many aspects of the section's activity over the previous decade.

At the AGM held on 18 January 1978, Mr R. Thomas, President, Mr R. Bland, Secretary and Mrs J. Humphris, Treasurer were re-elected. Messrs T. Evans, J. Burton, and W. Bigger were elected to the Committee, on the retirement of Messrs P. Chadwick, R. Curber and Dr B. Brownell. Committee members re-elected were Messrs S.M. Taylor, H.R. Hammacott,

P. Farmer, P. Carter, H. Rose, Miss E. Harris, Miss J. Haskins, and R. Chadwick.

R.L. BLAND, *Hon. Secretary*

REPORT OF MAMMAL SECTION, 1977

At the Annual General Meeting the following officers were elected:- President: Mr A.F. Jayne; Secretary and Treasurer: Mr R.A. Burberry; Mammal Recorder: Mr A.F. Jayne; Committee Members: Miss E.J. Lenton, Mrs C. Kitchen, Messrs M. Chapman, M. Kitchen, R. Surch and G. Walker.

Six indoor meetings were held:

January 11:	AGM and Presidential Address on Ynyshir.
February 8:	Mammal Sounds. Mr R. Margoschis.
March 8:	The Exmoor Pony. Miss S. Gates.
October 11:	Britain's Reptiles. Dr I. Spellerburg.
November 8:	A Steak in the Future. Mr R. Kyle.
December 13:	The Hunted Fox. Mrs M. Browne.

Attendances continued to decline, the average for the year being 33.

The following field meetings were held:

January 16:	Dormouse survey. Mr A.F. Jayne.
February 6:	Fox spotting. Mr R.A. Burberry.
March 13:	Mendip traverse with Bath Naturalists' Society. Mr J.V. Harris.
April 17:	South Gloucestershire walk. Mr R.A. Burberry.
May 6, 13, 20, 27:	Badger watches. Mr A.F. Jayne
May 15, 22:	Early morning walks. Miss E.J. Lenton.
June 19:	Weston Woods. Mr M. Harris.
July 10:	Fox spotting. Mr F.H. Rawlings.
July 29) August 5)	Roe watching. Miss E.J. Lenton. Mr R.A. Burberry.
August 21:	Lansdown and Langridge. Miss E.J. Lenton.
September 25:	Portbury. Mr G. Walker.
October 14-16:	New Forest weekend. Mr R. Surch.
November 20:	Severnside. Mr A.F. Jayne.
December 4:	Wotton and N. Nibley. Mr R.A. Burberry.

The mammal recording scheme has continued with a good response from members. It may not be generally realised that the Section also records amphibians and reptiles: the numbers of such records has not so far justified a separate report in the *Proceedings*; are frogs and toads becoming rare in Avon?

R.A. BURBERRY, *Hon. Secretary*

REPORT OF GEOLOGICAL SECTION, 1977

The Annual General Meeting of the Section was held on 20th January, 1977, in the Geology Lecture Theatre of the University. The following were elected:-

President: Mr N. Hollingsworth. Vice President: Mr T. Harrison. Secretary & Treasurer: Miss C.J. Mayle. Field Secretary: Mr D. Hamilton. *Ex. officio*: Professor D.L. Dineley, President of the Student Geological Society. Committee members: Mrs G. Hamilton, Miss E. Pounder, Mr P. Thompson, Mr V. Dennison, Mr A.E. Frey, Dr A.B. Hawkins. Co-opted member: Mrs M. Milton.

The following indoor meetings took place:-

January 12:	Annual General Meeting.
February 17:	Geochemical mapping in the Bristol and Mendip area. Mr S.A.M. Earle.
October 20:	Rates of Geological change in New Zealand. Mr D. Hamilton.
November 17:	Palaeosols in Southern East Anglia and their significance to the early history of the River Thames. Mr J. Rose.

The following four outdoor meetings took place:-

May 29:	Variation in Carboniferous Limestone and structures between Burrington Combe and Sandford, Mendips. Mr V. Dennison.
June 19:	Yeovil area. Mr M. Prudden.
July 10:	The Geology and landscape of S W Ludlow. Mr P. Thomson.
September 18:	North Cotswold area. Mr G. Margarettes.

C.J. MAYLE, *Hon. Secretary*

REPORT OF ENTOMOLOGICAL SECTION, 1977

At the Annual General Meeting of the section held on 4th January 1977 Mr G. Best was elected President and Mr B.S. Harper was elected Secretary.

During 1977 the following meeters were held:-

May 29:	River Avon, Hanham. B.S. Harper
June 26:	Arnos Vale Cemetery. P. Brain and A. Bailey.
July 16:	Congresbury Woods. B.S. Harper.
August 14:	Kingsweston Down. A. Nichols
October 1:	A.E.S. Exhibition, London.
November 27:	Annual Exhibition at the Bristol Museum.

An Entomological Survey of Leigh Woods commenced in 1977 and 5 afternoon field meetings and 1 evening meeting were held.

B.S. HARPER, *Hon. Secretary*

ACCOUNT OF GENERAL MEETINGS, 1977

Our first meeting on 19th January was an address by our President on 'At Sea in the South Western Approaches' when he described methods used to examine the nature of the seafloor.

February 3:	Dr M.V. Berry spoke on 'Optical effects in the atmosphere'. In his talk rainbows, coronae and halos etc. were considered as examples of the laws governing the behaviour of light waves.
March 24:	Dr A.F. Devonshire spoke on 'Maps and their Makers'. This lecture traced the origin of modern maps from the founding of the French Academy of Sciences in 1666 to the completion of the first British Ordnance Survey.
October 6:	Dr A. Hawkins spoke on the 'Effect of ice in the Avon area'. Dr Hawkins discussed evidence for the instrusion of ice into the Avon area and its effects on the geomorphology, soils and some aspects of natural history.
November 3:	Dr L.F. Curtis spoke on 'Remote sensing of the environment'. He discussed the impace of aerial and satellite surveys on environmental studies. The space shuttle programme and the new generations of space satellites were also discussed.

December 1:	Representatives from three of the Society's Sections described 'Techniques in Natural History'.

AUDREY HECKELS, *Hon. Secretary*

REPORT OF FIELD COMMITTEE, 1977

Thirteen field meetings were held during the year and two mid-week rambles; a third was washed out by the rain. A list of these meetings with dates, leaders, places visited and the main subjects of interest is given below; a fuller account is kept in the records of the Field Committee.

January 16:	H.G. Hockey. Llandegfedd Reservoir, near Pontypool. Part of a country park. Water-birds.
March 19:	Miss R.C. Lee. Lilstock to Kilve. A coastal walk. Geology, birds and remains of the oil distillation plant and priory.
April 8:	H.G. Hockey. Fyne Court, near Bridgwater, headquarters of Somerset County Trust. A walk round the Nature Trail, led by Peter Tolson.
May 4:	H.G. Hockey. Kingston Seymour. An evening walk along the seawall. Shore birds.
May 14:	D.A.C. Cullen. Pilton and Shapwick. A visit to the places associated with the Glastonbury legend. Birds, including nightingales.
May 21:	Miss C. Groves. Chedworth and Cirencester. A visit to Chedworth Roman Villa, Seven Springs, and Cirencester for Abbey, Church and Museum.
May 25:	R. Curber. Orchardleigh near Frome. This is a large park with a lake. Birds.
June 8:	Miss C. Groves. Flax Bourton Combe. A mid-week ramble. Plants, trees and birds.
June 12:	H.G. Hockey. Corfe Castle and Seacombe. A circular walk along the coast from Worth Matravers to Winspit and Seacombe, followed by a visit to Corfe Castle. Birds and plants.

June 18:	Miss R.C. Lee. Llynbrianne Reservoir. This is a new reservoir near Llandovery. A walk up the stream to the reservoir. Birds and plants.
June 29:	H.G. Hockey. Crook Peak and Max Mills. A walk from Winscombe to Woodborough and Max Mills, followed by a visit to Crook Peak, near Webbington. An old meadow, with a rich flora was seen and limestone plants on Crook Peak.
July 5:	Miss R.C. Lee. Ashton Court. An evening visit. Birds, plants and trees.
July 6:	Mrs V.J. Kenney. Frenchay. A mid-week ramble. Plants wild and cultivated, and local history.
July 9:	Miss J. Cox. Westbury Court and Cliffs. A visit to Westbury Court, and a walk to Westbury Cliff, Westbury-on-Severn. Westbury Court has a fine water garden, old varieties of garden plants and fruit trees and the largest holm oak in the country.
August 7:	A. Grenfell. Hawkesbury Upton and Inglestone Common. A walk from Hawkesbury Upton to Hawkesbury for limestone plants. At Inglestone Common, marsh and woodland plants.
September 10:	A.F. Devonshire. Abbots Wood, Forest of Dean. Nature trail in Abbots Wood, followed by a tour of the forest. Trees and geology.
October 22:	R. Curber. Studland, Dorset. Studland Nature Reserve. Birds and plants.

A.F. DEVONSHIRE *Hon. Field Secretary*

REPORT OF THE LIBRARIAN, 1977

This was the first full year operating under new regulations and reduced opening hours. As expected, the number of visits made to the Library has stropped slightly, although the total number of items borrowed was over 150. It is recognised that some members do find it difficult to visit the Library during Wednesday lunch-times or on Saturday mornings. Alternative, and longer, opening hours may be aimed at in future, depending on the times which members of the Library Committee can offer. We are grateful to all those who have worked in the Library this year, and are encouraged that the number of visitors does seem to be growing gradually as people become accustomed to the new procedures.

The Society is also grateful to all those who have donated items, particularly to Mr D. Hamilton for his gift of eleven books. In addition, 22 books were purchased, and some gaps were filled in our sets of Procs. Cotteswold Nat. Field Club, Procs. Dorset Nat. Hist. & Arch. Scoc. and Procs. Univ. Bristol Spelaeological Soc.

Our thanks to the Director of the City Museum, Bristol and to the Librarian of the University of Bristol, for providing accommodation, must once again be recorded.

Jennifer Scherr, *Hon. Librarian*

Accounts for the year ended 31 December 1977

1976		£	£
	Members' Subscriptions		
1,440	Full Members	1,449.85	
118	Full Members of the same household	123.75	
34	Corresponding Members	32.50	
17	Associates	10.00	
25	Juniors	17.76	
23	Affiliated Societies	20.00	
			1,653.86
1,657			
1	Donations		50.75
89	Proceedings		
	Grants	35.00	
	Offprints	47.90	
	Sales	41.14	124.04
1	Sale of journals and books		6.60
9	Profit on Buffet Supper		19.22
131	Interest on deposit account		91.55
2	Interest from National Savings Bank		1.72
33	Interest on Bonds & conversion premium		39.00
11	Members contributions to the Harry Savory Illustrations Fund		20.35
18	Steep Holm Trust refund		
25	City of Bristol donation		
2,584	Balance from last account		2,506.42
£4,561			£4,513.51

1976			£	£
310	General Printing and Stationery		404.24	
442	Postages and telephone		392.72	
				796.96
658	Proceedings (1975, balance)			677.50
306	Books		71.85	
114	Subscriptions for journals etc.		74.00	
60	Replacement of lost journals		20.47	
-	Binding		427.95	
13	Fire Insurance (library)		9.57	
				603.84
16	Contributions to Council for Nature, S.W.N.U. Steep Holm Appeal etc.			31.50
5	Expenses of general indoor meetings			-
	Purchase of copies of White's Flora of Bristol			38.00
26	Field Committee: loss			24.53
3	Buffet Supper : loss			-
103	Grants to Sections:			
	Botanical		10.00	
	Mammal		40.00	
	Ornithological		40.00	
	Geological		40.00	
	Junior		15.00	
				145.00
	Balances to next account:			
90	Cash in bank, current account	241.56		
	Less unpresented cheque	29.00	212.56	
1,911	Cash in bank, deposit account		1,503.00	
44	Deposit in National Savings Bank		45.70	
400	*£400 8½% & 9½% British Savings Bonds		400.00	
59	In hands of Field Committee		34.92	
1	In hands of Hon. Treasurer		-	2,196.18
£4,561				£4,513.51

* Including the Harry Savory Illustrations Fund of £128.40

Notes (1) These accounts do not record balance held by sectional treasurers and the Ornithological Section Special Fund

(2) The cost of the 1976 Proceedings amounting to an estimated £700 is an outstanding liability

P.J.M. Nethercott
Hon. Treasurer
16 January 1978.

Audited and found correct

T B SILCOCKS

9 February 1978.

BRISTOL BOTANY IN 1977

BY A. J. WILLIS

(Department of Botany, University of Sheffield)

The weather in 1977 was very close indeed to the annual average in respect of temperature, hours of sunshine and also rainfall, although there were several extended spells of cold and warm and of wet and dry weather. Total sunshine hours for the year were 98.7% of the average; the total rainfall for the year of 906.3 mm recorded at Long Ashton Research Station was 98.3% of the average. February and March were warm and wet months, rainfall in February (139.5 mm) being more than twice the normal amount. April, May and notably June were colder than usual, leading to rather late spring growth. Heavy rain in June was followed by a dry July, September also being a dry month. November was wet and rather cold, but the year ended with warmer and drier weather than average.

Recovery of vegetation from the heatwave and drought of 1976 seems to have been substantial, and some plants appear to have been favoured by the conditions. The combination of the existence of patches of bare ground after the summer drought of 1976 with the subsequent heavy rainfall in September and October no doubt favoured seed germination of annuals and casuals, which showed unusual abundance (for example *Papaver* spp.) in the spring of 1977. *Hornungia petraea* (L.) Reichb. and *Bromus madritensis* L. did well on both sides of the Avon Gorge (although the colonies of each are of very different size) and *Trinia glauca* (L.) Dumort. was profuse on Wavering Down and Crook Peak, with several small colonies evident on Cross Plain *(P.J.M.N.)*. On the other hand, the dry weather of 1975 and 1976 seems to have affected *Carex humilis* Leyss. very adversely on shallow soil on south-facing sites in the Avon Gorge where many plants have died*(Dr. L. C. Frost)*.

Some trends of change may be noted. The ravages of Dutch Elm disease have continued, the loss of the common elm being followed by the destruction of much wych elm. The loss of the wych elm in Nightingale Valley is now giving a serious reduction in tree cover. Fortunately, however, the population of *Carex digitata* L. in Leigh Woods has steadily improved with respect to both its population and range over a considerable period of years *(P.J.M.N.)*. An account by R. W. David of the distribution of *C. digitata* in Britain, giving some indication of sizes of populations in its various stations, is included in *Watsonia* (1978), Vol.12, Part 1, pp. 47-49.

Conservation work has been actively pursued. Rare species of the Avon Gorge endangered by rock removal work above the Portway have been carefully transplanted. Conservation work by members of the Gloucestershire Trust for Nature Conservation has led to a fine showing of *Ranunculus ophioglossifolius* Vill. at its site between Yate and Wotton-under-Edge *(A.L.G., R.S.C.)*. Work by the Somerset Trust for Nature Conservation includes the planting of *Carex depauperata* Curt. ex With. in Cheddar Wood; these plants may supplement the very small remaining original stock near Axbridge *(R.S.C.)*. On Steep Holm, work by the Kenneth Allsop Memorial Trust is seeking to conserve *Paeonia mascula* (L.) Mill. and *Allium ampeloprasum* L., both plants which appear to have declined greatly *(R.S.C.)*.

Information about some of the less common plants of the Bristol region is given in the descriptions of Sites of Special Scientific Interest included in Volume 2 of *A Nature Conservation Review* (1977), edited by D. A. Ratcliffe. A useful account is given of the Berrow Marsh which has changed substantially in the last two decades. Entries for the Avon Gorge list a number of the distinctive species, but it may be mentioned that William Turner was a clergyman and author rather than an artist (p.149), *Carex humilis* is accessible and flowers before *Arabis stricta* (p.149), and, although reported in the last decade, it is feared that *Thelypteris phegopteris* (p.65) may not now persist in Leigh Woods *(P.J.M.N.)*. As reported later in this article, *Aster (Crinitaria) linosyris* stated in the *Review* as 'not found on Brean Down' (p.150), has been known from there since 1965.

Among the very numerous records made in 1977, many indicate the persistence of plants in localities from which they have been reported long ago. Still present, for example, are *Botrychium lunaria* (L.) Sw. on Brean Down, *Vicia bithynica* (L.) L. on Publow Hill, *Chrysosplenium alternifolium* L. at Coley, *Oenanthe pimpinelloides* L. between Chewton Keynsham and Compton Dando and on Hursley Hill, *Myosotis secunda* A. Murr. and *Scutellaria minor* Huds. on Blackdown, and *Senecio sylvaticus* L. on Rodway Hill *(R.S.C.)*. Although *Veronica crista-galli* Stev. was first reported in the Bath district in 1926, its continued existence there was not realized until recently *(R.G.B.R.)*.

Many notable records of nationally or locally rare species have been made in 1977, reflecting the keenness of observers, and extensive field observations. Of native plants, of particular interest are the following records: *Atriplex longipes* Drejer on the bank of the Avon (first v.c. 34 record); *Valerianella rimosa* Bast. at two Bristol sites; *Euphorbia platyphyllos* L. in several sites in Bristol and Gloucestershire; *Polypogon monspeliensis* (L.) Desf. at Portishead; and *Puccinellia rupestris* (With.) Fernald & Weatherby in Somerset coastal sites. Numerous aliens were recorded, some for the first time in the Bristol area, e.g. *Physalis philadelphica* Lam., *Teline monspessulana* (L.) C. Koch and *Echinochloa utilis* Ohwi & Yabuno. A second record of the Blue Sow-thistle *Cicerbita bourgaei* (Boiss.) Beauverd has been made for the region.

Interesting records of bryophytes continue to be added by Mrs. J. Appleyard. New to v.c. 34 is *Bryum rufifolium* (Dix.) Rich. & Wall., and new to v.c. 6, both from Steep Holm, are *Pottia crinita* Wils. ex B., S. & G. and *Plagiochila killarniensis* Pears.

Names of contributors associated with several records, or with the determination of plants, are abbreviated thus:

J.A., Mrs. J. Appleyard
J.P.M.B., Professor J.P.M. Brenan
E.J.C., E.J. Clement
R.S.C., R.S. Cropper
T.G.E., T.G. Evans
I.F.G., Miss I.F. Gravestock
D.G., D. Green
A.L.G., A.L. Grenfell
C.E.H., Dr. C.E. Hubbard
C.W.H., C.W. Hurfurt
P.J.M.N., P.J.M. Nethercott
R.G.B.R., Capt. R.G.B. Roe, R.N.
M.A.S., Mrs. M.A. Silcocks

G: Gloucestershire
S: Somerset

Ranunculus parviflorus L. Still on Sand Point, S, *R.S.C.*, *A.L.G.* and *M.A.S.*, and on Brean Down, S, *R.S.C.* and *A.L.G.*

R. fluitans Lam. River Frome at Lathbury Mill, Stapleton, G, *I.F.G.*, det. at Kew.

R. circinatus Sibth. Walton Moor, Gordano Valley, S, *R.S.C.*

R. penicillatus (Dumort.) Bab. In quantity and flowering well in the River Yeo at Cheddar, S, and also in pond and stream, Rickford, S, *R.S.C.* This plant *(R. pseudofluitans* auct.) has long been known from 'Cheddar Water' (see J.W. White *Flora of Bristol*, p.115).

Papaver lecoqii Lamotte Widespread in 1977, especially on waste ground and disturbed sites, Newfoundland Road, Bristol, G, Downend, G, Winterbourne, G, Frenchay, G, Old Sodbury, G, Shortwood, G, Frampton Cotterell, G, Pucklechurch, G, Moorend, G, and Wotton-under-Edge, G, *A.L.G.*

Fumaria capreolata L. Track adjoining Cheddar Wood, S, *R.S.C.*

F. densiflora DC. Abundant weed in market gardens, Bromley Heath, Downend, G, *A.L.G.*, det. *P.M. Benoit*. The site adjoins the road from which this Fumitory, very rare in Gloucestershire, was recorded in *Bristol Botany in 1964*.

Diplotaxis tenuifolia (L.) DC. Near tips, Weston Drove, Gordano Valley, S, *I.F.G.*

Raphanus maritimus Sm. In small quantity adjoining the sea wall, Kingston Seymour, S, *R.S.C.*

Lepidium heterophyllum Benth. Castle Green, Bristol, G, *I.F.G.*

Teesdalia nudicaulis (L.) R. Br. Twenty or more plants at Bury Hill, Winterbourne, G, *A.L.G.*, conf. *A.J. Willis*. A single specimen was reported from this locality last year.

Cochlearia danica L. Still plentiful east of the Nore at Portishead, S, *R.S.C.* In a recent paper by J.J.B. Gill *et al.* (*Watsonia* (1978), Vol.12, Part 1, pp. 15-21) it is shown that *C. officinalis* L. from Cheddar Gorge is a tetraploid cytotype.

Cardamine bulbifera (L.) Crantz Several well established colonies in Smallcombe Wood, Bath, S, *R.D. Randall*, per *R.G.B.R.*

Viola canina L. Above the wood, Rodney Stoke, S, *R.S.C.*

Silene noctiflora L. Many plants in arable field near Littleton Wood, G, *A.L.G.*

Saponaria officinalis L. Tickenham, S, *I.F.G.* Double-flowered form, waste ground, Frenchay, G, *A.L.G.*

Cerastium pumilum Curt. Hill above Rodney Stoke, S, Churchill Batch, S, and Dolebury Warren, S, *R.S.C.*

Stellaria pallida (Dumort.) Piré Steep Holm, S, *R.G.B.R.* This plant was previously recorded for Steep Holm in 1938 (see *Somerset Archaeological and Natural History Society Report*).

Moenchia erecta (L.) Gaertn., Mey. & Scherb. A single plant, Rodway Hill, near Mangotsfield, G, *A.L.G.* Nearby was *Trifolium subterraneum* L.

Montia fontana L. subsp. *chondrosperma* (Fenzl) Walters Chipping Sodbury Common, G, *G.W. Garlick*, per *A.L.G.*

Chenopodium polyspermum L. Street Heath, S, *R.S.C.*

Atriplex littoralis L. Waste ground, Newfoundland Road, Bristol, G, *A.L.G.* and *T.G.E.*, conf. *E.J.C.*

A. longipes Drejer In one small locality, on the marshy bank of the Avon, Lamplighters, Shirehampton, G, *I.F.G.*, det. *P.M. Taschereau.* This very rare coastal halophyte matures earlier than other species of *Atriplex* and, as in the present site, is often associated with *Agropyron pungens* (Pers.) Roem. & Schult., *Aster tripolium* L. and sometimes *Phragmites communis* Trin. This is the first authentic record for v.c. 34, although *A. patula* var. *bracteata* Westerl., which may refer to this taxon, is recorded from Bristol, G (Druce, *Botanical Exchange Club Report for 1927*, p.415). The plant is reported from the upper shore at Brean Down, S, and from herbarium material from Burnham, S. These Somerset records and a description of *A. longipes* are given by *E.M. Jones* in a paper entitled 'Taxonomic studies of the genus *Atriplex* (Chenopodiaceae) in Britain' in *Watsonia* (1975), Vol.10, Part 3, pp. 233-251. Further information on *A. longipes* and a key are given by P.M. Taschereau in *Watsonia* (1977), Vol.11, Part 3, pp. 195-198.

Linum bienne Mill. Castle Green, Bristol, G, *M.A.S.*, per *I.F.G.* Also *Sisymbrium orientale* L.

Geranium columbinum L. Langridge, S, *P.J.M.N.*

G. molle L. With white flowers and light foliage, Ivory Hill, Winterbourne, G, *A.L.G.*

G. purpureum Vill. subsp. *purpureum* Still on St. Vincent's Rocks, Avon Gorge, G, *R.S.C.*

Erodium maritimum (L.) L'Hérit. Favoured by the large fire of August 1976, increasing considerably, on Sand Point, S, *R.S.C.* and *A.L.G.* Also luxuriant on the burnt ground was *Trifolium striatum* L.

Medicago arabica (L.) Huds. Thornbury Castle, G, *Mrs. P. Mack*, per *I.F.G.*

Trifolium ornithopodioides L. Rodway Hill, G, *A.L.G.* Persistent on Frenchay Common, G; and also on Brean Down, S, and Sand Point, S, *A.L.G.*

T. medium L. Churchill Batch, S, Max Bog, Winscombe, S, and Charterhouse, S, *R.S.C.*

T. squamosum L. Plentiful on raised banks on salt marsh, Kingston Seymour, S, *R.S.C.*

Lotus tenuis Waldst. & Kit. ex Willd. Tip, Westerleigh, G, *A.L.G.*

Ornithopus perpusillus L. Disused quarry, Winterbourne Down, G, *A.L.G.* Still on the Pennant at Frenchay Common, G, and Bury Hill, G, *A.L.G.*, and on Rodway Hill, *A.L.G.* and *R.S.C.*

Lathyrus nissolia L. Meadow, Frenchay, G, *A.L.G.* Also in re-seeded verge near Tormarton, G, *A.L.G.*; nearby were *Crepis setosa* Haller f. and *Parentucellia viscosa* (L.) Caruel, conf. *A.J. Willis.*

Sorbus anglica Hedl. A small tree, the largest and oldest of the specimens in Leigh Woods, accidentally wrecked, S, *P.J.M.N.*

Sedum forsteranum Sm. On log, Kewstoke, S, *I.F.G.*

Daphne laureola L. A few bushes, Weston Big Wood, near Weston-in-Gordano,S,R.S.C.

Torilis nodosa (L.) Gaertn. On raised banks at Kingston Seymour, S, *R.S.C.* Also at Saltford, S, *A.L.G.*

Petroselinum segetum (L.) Koch Destroyed by spraying at Hawkesbury Upton, G, *A.L.G.*, but abundant in pasture on Broad Hill nearby. Plentiful at Pill, S, and Eastertown, near Lympsham, S; several patches at West Huntspill, S, and Kingston Seymour, S; also in smaller quantity at Berrow, S, and by the roadside, Shapwick Heath, S, *R.S.C.* Persistent at Saltford, S, *A.L.G.*; at Uphill, S, near Highbridge, S, and near Burnham-on-Sea, S, *R.S.C.*

Sison amomum L. Tip, Lawrence Weston, G, *A.L.G.* Also between Shirehampton and Avonmouth, G; Churchill, S, Pill, S, Eastertown, S, Burnham-on-Sea, S, and Barrow Hill, near Great Elm, S, *R.S.C.*

Euphorbia platyphyllos L. At two sites at Downend, G, Westerleigh Tip, G, and Newfoundland Road and Lawrence Hill, Bristol, G, *A.L.G.* Castle Green, Bristol, G, *A.L.G, I.F.G.* and *M.A.S.* Also in cultivated field between Doynton and Pucklechurch, G, *C.W.H.*

E. exigua L. On the beach, Berrow, S, and in limestone grassland, burnt in 1976, at Crook Peak, S, *A.L.G.*

Rumex pulcher L. Several plants at Sand Point, S, *R.S.C.*

Urtica urens L. On tip, Abson, G, *C.W.H.*, and on Brandon Hill, Bristol G, *R.S.C.* Also in Keynsham Park, S, *C.W.H.*, and at Woodspring Priory, S, *M.A.S.*, per *I.F.G.* The tip at Abson supports many plants typical of disturbed sites, including *Picris echioides* L. *(C.W.H.)*.

Primula veris L. × *vulgaris* Huds. Woods near Cold Ashton, G, *I.F.G.*, *Mrs. P.H. Royle* and *M.A.S.* Wood, Chilcompton, S, and on bank, Chelwood, S, *R.S.C.*

Vinca minor L. With white as well as blue flowers in wood, Compton Martin, S, *R.S.C.*

Lithospermum officinale L. Roadside, Rose Wood, near Axbridge, S, *R.S.C.*

L. arvense L. (*Buglossoides arvensis* (L.) I.M. Johnston) Abundant at Old Sodbury, G, Tormarton, G, West Littleton, G, and Codrington, G, *A.L.G.*

Hyoscyamus niger L. One plant, Black Rocks, Bristol, G, *C.M. Lovatt* and *A.L.G.*

Linaria × *sepium* Allman With both parents (*repens* (L.) Mill. and *vulgaris* Mill.) on railway sidings, Avonmouth Docks, G, *A.L.G.*

Kickxia spuria (L.) Dumort. Potato field, Old Sodbury, G; abundant on Westerleigh Tip, G; also on Castle Green and Lawrence Hill, Bristol, G, *A.L.G.*

K. elatine (L.) Dumort. Strontia Pits, Wickwar, G, Westerleigh Tip, G, and Lawrence Hill, Bristol, G, *A.L.G.*

Lathraea squamaria L. Langridge Bottom, S, and copse at Winterhead, near Shipham, S, *R.S.C.*

Orobanche minor Sm. Roadside at Churchend, near Charfield, G, *R.S.C.* On *Crepis capillaris* (L.) Wallr., Shiplate Slait, S, *J.A.* On Compositae, Court Hill, Clevedon, S, *R.S.C.*

O. hederae Duby Woodhill, Portishead, S, *I.F.G.*

Stachys sylvatica L. With white flowers, near Littleton Wood, G, *A.L.G.*

Lamium amplexicaule L. Edge of cornfield, Kilcott, G, *R.S.C.* Also on retaining surround of Axbridge reservoir, S, *J.A.*

Galeopsis tetrahit L. Several white-flowered plants in hedgerow, Frampton Cotterell, G, *A.L.G.*

Campanula glomerata L. Several plants, hillside, Fortnight, S, *R.S.C.*

Legousia hybrida (L.) Delarb. Abundant as cornfield weed, near Horton, G, and near Littleton Wood, G, *A.L.G.*

Asperula cynanchica L. Hillside above Rodney Stoke, S, Loxton Hill, S, hillside at Fortnight, S, *R.S.C.*

Galium × *pomeranicum* Retz. Several plants, Brean Down, S, *A.L.G.*

G. uliginosum L. Boggy meadow, Churchill, S, *R.S.C.*

G. fleurotii Jord. This segregate of *G. pumilum* Murr. has only recently been recognized as occurring in Britain (see *British Red Data Book: 1, Vascular Plants*, by F. H. Perring and L. Farrell, S.P.N.C., 1977). The large population in the Cheddar area is the only representation of this taxon in Britain. It is included on the list of rare and threatened plants of Europe of the International Union for Conservation of Nature Resources (IUCN). A description of the plant is given in *Flora Europaea*, Vol.4, p.31 (1976).

Sambucus ebulus L. Still at Ivory Hill, G (see White *Flora of Bristol*, p.350), though diminished in quantity, *A.L.G.*

Valerianella carinata Lois. Abundant at Moorend, G, and on Winterbourne Down, G, *A.L.G.* Known previously from Winterbourne Station (see *Bristol Botany in 1956*). Also plentiful on wall, Dolebury, S, *R.S.C.*

V. rimosa Bast. On sports ground, Downend, Bristol, G, *A.L.G.*, conf. *D.M.Barling.* Waste ground, Castle Green, Bristol, G, *I.F.G.*

Senecio vulgaris L. forma *radiatus* Koch Tip, Kingsweston, G, *I.F.G.* Also *Chrysanthemum maximum* Ramond.

Filago germanica (L.) L. Wavering Down, S, *P.J.M.N.*

Aster tripolium L. A large patch, Bedminster Down Tip, S, *A.L.G.* and *T.G.E.*

Crinitaria linosyris (L.) Less. A good colony on precipitous cliff, Brean Down, S, *R.S.C.* This very rare British plant was first known from Brean Down in 1965, this being the site referred to in *Bristol Botany in 1965*.

Cirsium eriophorum (L.) Scop. Old railway line, Saltford, S, *R.S.C.*

Centaurea cyanus L. In re-sown pasture, Easter Compton, G, *C. Banfield*, per *A.L.G.* Persistent on St. Vincent's Rocks, Bristol, G, *A.L.G.*

Lactuca serriola L. Lamplighters, Shirehampton, G, *I.F.G.* In 1977 this plant increased considerably in sites where it had not been recorded prior to 1976: at Willsbridge, G, near Abson, G, at Canon's Marsh car park, Bristol, G, and at Keynsham, S, *C.W.H.* Also plentiful on verges, Burnham-on-Sea, S, *R.S.C.*

Hieracium vagum Jord. Disused railway line, Saltford, S, *A.L.G.*, det. *P.D.Sell.* This plant, new to v.c.6, is rare in Somerset and probably always introduced.

Crepis biennis L. Marshfield, G, *R.S.C.*

Triglochin palustris L. Langridge, S, *P.J.M.N.* Also in boggy meadow, Churchill, S, *R.S.C.*

Potamogeton natans L. Pond at Kenn, S, *R.S.C.*

Zannichellia palustris L. Ditches near Axbridge, S, rhines near Eastertown, S, pool on the dunes at Berrow, S, *R.S.C.*

Polygonatum multiflorum (L.) All. Henley Tyning, Cold Ashton, G, *I.F.G.*, *Mrs. P. H. Royle* and *M.A.S.* Also Hartley Wood, north of Charmy Down, S, *D.G.*

Paris quadrifolia L. Copse, Chelwood, S, *R.S.C.*

Narcissus pseudonarcissus L. A few plants, Ham Woods, Croscombe, S, *R.S.C.*

Iris foetidissima L. Plentiful at Brent Knoll, S, *R.S.C.*

Spiranthes spiralis (L.) Chevall. After a very poor performance in 1976, this orchid flowered profusely in 1977 *(A.L.G.*, *R.S.C.)*. Frequent on lawns at Tockington, G, *R. Tovey*, per *A.L.G.* Mendip sites for the plant include Rodney Stoke, Loxton Hill and Dolebury Warren, S, *R.S.C.*

Ophrys apifera Huds. A few plants near Compton Martin, S, *R.S.C.*

Orchis morio L. Abundant in 1977 on Worle Hill, S, *R.S.C.* Also on the south side of Sand Point, S, *M.A.S.*

Dactylorhiza praetermissa (Druce) Soó Stream, Cold Ashton, G, *D.G.*

Wolffia arrhiza (L.) Hork. ex Wimm. Rhine at Eastertown, S, *R.S.C.*

Typha latifolia L. Pool, Churchill, S, *R.S.C.*

Scirpus sylvaticus L. Boggy field by Cam Brook, near Camerton, S, *J.A.* Although formerly abundant near Hallatrow (see White *Flora of Bristol,* p.618), this Club-rush has not been seen in this station recently.

S. lacustris L. Abundant in the River Avon at Freshford, S, *R.S.C.*

S. fluitans L. Old peat cutting, Ashcott Heath, S, *R.S.C.*

Carex distans L. Marshland below Axbridge, S, *R.S.C.*

C. pseudocyperus L. Pond, Charterhouse, S, *R.S.C.*

C. strigosa Huds. Ditch in wood north of Compton Martin, S, *R.S.C.*

C. spicata Huds. Cook's Folly, Bristol, G; Yarley Hill, S, Hursley Hill, S, Sandford Hill, S, Saltford, S, *R.S.C.*

C. ovalis Gooden. Beacon Hill, Mendip, S, *R.S.C.*

Festuca ovina L. var. *hispidula* (Hack.) Hack. In 1976, base of cliffs, Avon Gorge, G, *T.G.E.,* det. *C.E.H.,* but killed by drought.

Lolium perenne L. forma *cristatum* (Pers.) Tubb's Bottom, Frampton Cotterell, G, *A.L.G.,* conf. *C.E.H.* This variety has a dense, spiral inflorescence.

L. perenne L. forma *ramosum* (Schumach.) Avonmouth Docks, G, *A.L.G.* and *I.F.G.,* det. *C.E.H.* This is a much-branched form.

Vulpia myuros (L.) C.C.Gmel. Plentiful at Charfield, G; along old railway line at Cheddar, S, *R.S.C.*

Puccinellia rupestris (With.) Fernald & Weatherby Abundant on bare ground, West Dock, Portishead, S, *A.L.G.* and *I.F.G.,* det. *C.E.H.* Also in Sand Bay among *Spartina* near Sand Point, S, *M.A.S.,* conf. *P.J.M.N.* Once plentiful in the Avon Gorge, this grass is now very much diminished, although still persistent in small quantity at Pill - see article by *P.J.M.N.* on J.L. Knapp's *Gramina Britannica* in these *Proceedings* for 1976.

Catabrosa aquatica (L.) Beauv. Yardley Lane, near Winscombe, S, *J.A.* Recorded (see White's *Flora*) from Max but not seen near recently.

Dactylis glomerata L. Proliferous form, Hawkesbury Upton, G, *A.L.G.,* conf. *C.E.H.*

Agropyron repens (L.) Beauv. A pruinose form, Frampton Cotterell, G, *A.L.G.*, det. *C.E.H.* Also var. *aristatum* Baumg. at Frampton Cotterell, G, and garden weed, Winterbourne Down, G, *A.L.G.*, conf. *C.E.H.*

Hordeum marinum Huds. Abundant, bare ground, West Dock, Portishead, S, *A.L.G.* and *I.F.G.*, det. *C.E.H.* Also Salthouse Weir, Clevedon, S, *I.F.G.*

Polypogon monspeliensis (L.) Desf. var. *panicus* L. Abundant on bare ground, West Dock, Portishead, S, *A.L.G.* and *I.F.G.*, det. *C.E.H.*

Gastridium ventricosum (Gouan) Schinz & Thell. Although the population is tiny, this grass did well in 1977 on the east side of the Avon Gorge, G, *P.J.M.N.*

Nardus stricta L. In some quantity in one spot on Rodway Hill, Mangotsfield, G, *A.L.G.* This grass is very local in Gloucestershire.

Spartina anglica C.E. Hubbard Much confusion has existed between the male-sterile hybrid × *townsendii* H. & J. Groves and the fertile, more vigorous *S. anglica*. The latter is the widespread plant of the Bristol area. Old herbarium specimens from Shirehampton, Nupdown and Hill (all G) examined by Dr. C.E. Hubbard have all proved to be *S. anglica*. Where *S. anglica* and *S.* × *townsendii* have been found together, e.g. Poole Harbour and in Norfolk, the latter is in comparatively higher parts of the marsh; stands of *S. anglica* should be searched for patches of *S.* × *townsendii* in the Bristol region.

ALIENS. *Cyrtomium falcatum* (L. f.) C. Presl Tip, Shortwood, G, *A.L.G.* One specimen of the House Holly Fern, a domestic 'throwout', appears to be established on the tip. This native of E. Asia is now referred to under *Polystichum falcatum* (L. f.) Diels.

Azolla filiculoides Lam. Rhines on Nailsea Moor, S, *P.J.M.N.* Also in pond, Kingston Seymour, S, and rhine at Burnham-on-Sea, S, *R.S.C.*

Delphinium ambiguum L. (*Consolida ambigua* (L.) P.W. Ball & Heywood) Castle Green, Bristol, G, *A.L.G.*, conf. *E.J.C.*

Mahonia aquifolium (Pursh) Nutt. Wood near Dyrham Park, G, *K.T. Batty*, per *I.F.G.*

Papaver somniferum L. Saltford, S; also on Sandford Hill, S, *R.S.C.*

P. atlanticum (Ball) Coss. Disused tip, Moorend, G, *A.L.G.*, conf. *E.J.C.*

Eschscholzia californica Cham. Casual, Winterbourne, G, *A.L.G.*

Rapistrum rugosum (L.) All. In quantity, Lamplighters, Shirehampton, G, *I.F.G.*

Rorippa austriaca (Crantz) Bess. This crucifer has spread to cover several acres near Hoar Gout, G, *A.L.G.* (see *Bristol Botany in 1974*).

Hesperis matronalis L. Edge of disused quarry, Wick Rocks, G, *I.F.G.* Also Dursley, G; Winscombe, S, *R.S.C.*

Erysimum cheiranthoides L. Adjoining Axbridge reservoir, S, *J.A.* Also near this reservoir in 1970, *C. A. Howe*, per *J.A.*

Reseda alba L. Tip, Bedminster Down, Bristol, S, *A.L.G.* and *T.G.E.*

Agrostemma githago L. Steep bank along Horseshoe Bend, Portway, Shirehampton, G, *Miss T. Hamand*, conf. *I.F.G.* Previously recorded from Shirehampton (see White *Flora of Bristol*, p.187).

Cerastium tomentosum L. Disused railway track, Saltford, S, *R.S.C.*

Amaranthus retroflexus L. Like *A. albus* L., well-established at Avonmouth Docks, G, *A.L.G.* and *Lady Ricketts*, conf. *J.P.M.B.* Also single plants in potato field, Winterbourne, G, *A.L.G.*, det. *J.P.M.B.*; also on Shortwood Tip, G, and waste ground, Newfoundland Road, Bristol, G, *A.L.G.*

A. hybridus L. subsp. *hybridus* Several plants on grain sweepings, Avonmouth Docks, G, *A.L.G.* and *T.G.E.*, det. *J.P.M.B.*

A. palmeri S. Wats. A single male plant on grain sweepings, Avonmouth Docks, G, *A.L.G.* and *T.G.E.*, det. *E.J.C.* and *J.P.M.B.* This species was abundant in the Docks in 1959 and 1961 (see *Bristol Botany* articles for those years).

Chenopodium bonus-henricus L. Langridge, S, *P.J.M.N.*

Abutilon theophrasti Medicus Single plants in market gardens at Bromley Heath, Downend, G, and Winterbourne, G, *A.L.G.*, conf. *E.J.C.* This adventive, a native of Southern Asia, was damaged by frost before anthesis (see also *B.S.B.I. News*, 1978, No.18, p.11).

Impatiens glandulifera Royle Along the river at Saltford, S, and Freshford, S, *R.S.C.*

Lupinus arboreus Sims A large patch naturalized on Hursley Hill, north of Pensford, S, *R.S.C.*

Vicia sativa L. With white flowers, Uphill, S, and Axbridge, S, *R.S.C.*

V. pannonica Crantz A small patch in grassy area of lock on the Avon at Saltford, S, *R.S.C.*, det. *E.J.C.* The plants were first found in June 1976, and garden-grown specimens were raised from seed. This annual Mediterranean vetch is persisting in the site and, although cut down in July 1977, flowered again in late September. It is known from Ashton Gate (1922), and from Avonmouth Docks (see C.I. Sandwith *The Adventive Flora of the Port of Bristol, Botanical Exchange Club Report for* 1932, Vol. X, p. 332), as well as from Yate (see *Bristol Botany in 1958).*

Lathyrus latifolius L. Large patch, roadside, Berrow, S; also on disused railway line, Saltford, S, *R.S.C.*

Potentilla norvegica L. Tip, Bedminster Down, S, *A.L.G.* and *T.G.E.*, conf. *E.J.C.*

Teline monspessulana (L.) C. Koch The 'Montpelier Broom' on old tip, Kingsweston, G, *I.F.G.*, det. *E.J.C.*

Rubus laciniatus Willd. North slope of Blackdown, above Burrington Coombe, S, *R.S.C.* This blackberry is already recorded from the summit of Blackdown (*Bristol Botany in 1954*).

Sedum dasyphyllum L. Winterbourne Down, G, *A.L.G.*

S. reflexum L. On walls at Winterbourne Down, G, and at Kendleshire, G, *A.L.G.* The site by Cog Mill between Winterbourne and Iron Acton listed by White (*Flora of Bristol*, p.324) has been destroyed by road widening. On tip, Kingsweston, G, *I.F.G.* and *Miss J. Cox.*

Oenothera erythrosepala Borbás In very small quantity, old railway line, Shapwick Heath, S, and by roadside at Cheddar, S, *R.S.C.*

O. stricta Ledeb. ex Link A few plants, Sand Bay, S, and still at Burnham-on-Sea, S, *R.S.C.*

Ammi majus L. Weed, in carrots, Bromley Heath, Downend, G, and Winterbourne Down, G, *A.L.G.* Also on tip, Bedminster Down, S, *A.L.G.* and *T.G.E.*, conf. *E.J.C.*

Euphorbia uralensis Fisch. ex Link Plentiful on roadside and adjoining arable land, Newton St Loe, S, *A.L.G.*, conf. *E.J.C.*

Symphytum x *uplandicum* Nyman Lathbury Mill, Stapleton, G, *I.F.G.*

Nicandra physalodes (L.) Gaertn. One plant in potato field, Downend, G, *A.L.G.*

Physalis philadelphica Lam. A single plant flowered well in Avonmouth Docks, G, *A.L.G.* and *I.F.G.*, det. *E.J.C.* Frosts prevented this American plant from setting fruit.

Datura stramonium L. One plant, Elberton Tip, G, *A.L.G.* One plant of the violet-flowered form, var. *tatula* (L.) Torrey, in potato field, Downend, G, *A.L.G.*

Linaria maroccana Hook. f. A single plant, waste ground, Newfoundland Road, Bristol, G, *A.L.G.* Also present were *Linum usitatissimum* L. and *Vicia villosa* Roth subsp. *villosa*.

Veronica crista-galli Stev. Well established on both sides of Fosse Lane, Batheaston, S, *R.D. Randall*, per *R.G.B.R.* Also nearby on banks of lanes and a footpath at intervals over some half a mile. This early-flowering speedwell was first recorded from Batheaston in 1926 (L.V. Lester-Garland, *Botanical Exchange Club Report for 1926*, p.127), and there is evidence (herbarium specimens collected by Miss P.E. White in 1942) that it has persisted there ever since. This rare alien has also been recorded (*J.P.M.B.*) from a roadside south of Bathford, S (see also *Botanical Exchange Club Report for 1935*, p.35). An article on the plant by *R.G.B.R.* will appear in *Watsonia*.

Mentha × *villosa* Huds. nm. *alopecuroides* (Hull) Briq. Disused tip, Moorend, G, *A.L.G.*, det. *E.J.C.* Also present was *M. spicata* L.

Campanula rapunculoides L. Previously reported (1974) from Keynsham, S, this plant has spread substantially and is now on the Gloucestershire side of the Avon, G, *C.W.H.* Persistent along old railway line, Shapwick Heath, S, *R.S.C.* (see *Bristol Botany in 1944*).

Asperula orientalis Boiss. & Hohen. (*A. azurea* Jaub. & Spach) Westerleigh Tip, G, *A.L.G.*, conf. *E.J.C.* This native of S.W. Asia is sometimes cultivated for ornament.

Symphoricarpos rivularis Suksd. Well naturalized in hedgerows on Yarley Hill, near Henton, S, and along old railway line at Saltford, S, *R.S.C.*

Galinsoga ciliata (Raf.) Blake Seeded verge, Black Rocks, Bristol,G, *A.L.G.*

Ambrosia artemisiifolia L. Avonmouth Docks, G, *A.L.G.* and *T.G.E.*, conf.*E.J.C.*

Inula helenium L. Under Bannerdown and roadside, Batheaston, G, *D.G.*

Solidago canadensis L. Old railway line, Saltford, S, *R.S.C.* Also verge, Tickenham, S, *I.F.G.*

S. graminifolia (L.) Salisb. Well established on roadside near Dyrham, G, *D.G.*, conf. *R.G.B.R.*, where it has been known since 1965.

Conyza canadensis (L.) Cronq. Shapwick Heath, S, and Cheddar, S, *R.S.C.*

Guizotia abyssinica (L.f.) Cass. Shortwood Tip, G, Newfoundland Road, Bristol, G; also Bedminster Down Tip, S, *A.L.G.* This native of E. Africa is introduced with bird seed.

Silybum marianum (L.) Gaertn. One plant on Steep Holm, S, *R.S.C.* Exceptionally abundant on Brean Down, S, in 1977, although only a single plant was seen in 1976, *R.S.C.* and *A.L.G.*

Cicerbita bourgaei (Boiss.) Beauverd Roadside verge, Little Sodbury, G, *Mrs. M.M.C. Reiss* and *A.L.G.*, conf. *E.J.C.* This is a second record for the Bristol district (see *Bristol Botany in 1974*).

C. macrophylla (Willd.) Wallr. Doughton, G, *A.L.G.*

Hieracium aurantiacum L. By the River Frome at Frenchay, G, *A.L.G.*

Asparagus officinalis L. subsp. *officinalis* Disused railway line, Saltford, S, *R.S.C.*

Allium carinatum L. In two places in the tow path area under Leigh Woods, S, *P.J.M.N.* (see *Bristol Botany in 1962*).

Bromus inermis Leyss. Roadside, Winterbourne Down, G, and Avonmouth Docks, G, *A.L.G*, conf. *E.J.C.*

Echinochloa utilis Ohwi & Yabuno A single plant, tip, Bedminster Down, G, *A.L.G.* and *T.G.E.*, conf. *E.J.C.*

Setaria viridis (L.) Beauv. Shortwood Tip, G; also Bedminster Down Tip, S, *A.L.G.*

BRYOPHYTES: HEPATICS. *Plagiochila killarniensis* Pears. In 1954, Steep Holm, S, *N. Y. Sandwith*, det. *J. A.*, conf. *J. A. Paton*. The specimen is in the Herbarium, Department of Botany, University of Bristol. This taxon is new to v.c. 6. A full description of the reinstated species, with information on its distribution, is given by Jean A. Paton in a recent paper entitled '*Plagiochila killarniensis* Pears. in the British Isles' (*J. Bryol.* 1977, Vol. 9, pp. 451-459).

Nowellia curvifolia (Dicks.) Mitt. Now in Paradise Bottom, Leigh Woods, S, *P.J.M.N.* This liverwort has extended its area in Nightingale Valley where it was first known in 1962.

Lejeunea lamacerina Gottsche ex Steph. var. *azorica* (Steph.) Greig-Smith In the Trym valley, G, *J.A.* Also in this area are *Marchesinia mackaii* (Hook.) Gray and the moss *Isothecium striatulum* (Spruce) Kindb.

MOSSES. *Campylopus introflexus* (Hedw.) Brid. Near the golf course, Westbury-on-Trym, Bristol, G, *J.A.* This moss is spreading fast, but is known from only one other site in v.c. 34.

Pottia crinita Wils. ex B., S. & G. On soil-covered ledges near the landing beach, Steep Holm, S, *J.A.* This species is new to v.c. 6.

Grimmia orbicularis Bruch ex Wils. On old wall, Chewton Rabbit Warren, north of Stock Hill plantation, S, *J.A.*

Bryum rufifolium (Dix.) Rich. & Wall. On the remains of a wall of the Roman Villa near Shirehampton, G, *J.A.* New to v.c. 34.

Orthotrichum stramineum Hornsch. ex Brid. Newbury Firs, near Mells, S, *J.A.* This is a very rare species in North Somerset.

Hookeria lucens (Hedw.) Sm. In the Forestry Commission part of Leigh Woods, S, *P.J.M.N.* The moss was believed extinct in this locality, not being recorded for Leigh Woods since early this century (see J. Appleyard, A Bryophyte Flora of North Somerset, *Trans. Br. bryol. Soc.*, 1970, Vol. 6, p.33).

Thuidium delicatulum (Hedw.) Mitt. Re-found in Asham Wood, near Frome, S, *J.A.*, where first recorded by J.P.M. Brenan in 1946. A new site for this moss is Ashwick Grove, near Oakhill, S, *J.A.*

T. philibertii Limpr. In thin grass, small quarry near West Harptree, S, *J.A.*

Eurhynchium megapolitanum (Bland.) Milde At the side of paths, and probably spreading, on Steep Holm, S, *J.A.*

I thank everyone who has supplied records and helped with these, especially Mrs. J. Appleyard, Miss I. F. Gravestock, Mr. A. L. Grenfell, Mrs. S. C. Holland, Mr. P.J.M. Nethercott and Captain R.G.B. Roe. I am indebted to Long Ashton Research Station for the supply of meteorological records.

AVON BIRD REPORT, 1977

COMPILED BY THE EDITORIAL COMMITTEE OF THE
B.N.S. ORNITHOLOGICAL SECTION

P.J. Chadwick H.R. Hammacott
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THE YEAR 1977 was characterised by fairly mild winter months and a cold spring and early summer. February, June and August were very wet; July, September and October were unusually dry.

January's weather was mixed; the first half was cold, with a particularly wintry spell from the 9th-13th, bringing snow to many parts of Britain. In Avon, Redwings were plentiful, but it seemed that Fieldfares were less so until mid-month. Bramblings were less in evidence than for several winters; this was true too at the end of the year. The large numbers of duck reported at the end of 1976, especially at Chew Valley Lake (CVL) diminished considerably; for Mallard and Teal in particular, the peak count in January was less than half the late December figure. Pochard were an exception; their numbers did not decrease, and may have increased, in January. (As so often is the case with duck data, the great variation in individual counts and the infrequency of synchronised visits to the major waters combine to obscure the truth). Bewick's Swans also increased, to a record total, before a fairly abrupt dispersal later in the month. The usual Cormorant gathering at CVL reached 89, the year's maximum and the same as in January 1976.

From Jan. 24 to the end of February, weather in the south of England was mild and unsettled, with severe gales on Jan. 24 and Feb. 18 and frequent heavy rain made the month's total more than twice the long-term average. A Lanner falcon seen at CVL in both January and February was doubtless the bird, presumed to have escaped from a falconer, that had been seen at intervals since the end of 1975. A Goshawk was also seen at Chew in February. An influx of Ring-necked Ducks to Britain had brought three to CVL late in 1976 and a fourth appeared in February. Another, ringed at the New Grounds, Glos., on March 1 was shot in S.E. Greenland in May, presumably whilst returning to N. America, and in April two others were reported in Somerset. As is now usual, Blackcaps were frequently seen; not all of these need have been lingering from summer, as substantial numbers arrived from N. Europe during the autumn of 1976.

As in recent years, a region of high pressure began to form in mid-Atlantic at the end of February, its circulation bringing polar air to W. Europe. Unusually, the 'high' collapsed at the beginning of March and an anticyclone over the W. Mediterranean gave warm, sometimes strong, winds from the south. Temperatures rose rapidly - at Exeter, 20.2°C was recorded on March 2 - and some passerine migrants arrived early, as well as vagrants which included Hoopoes (seven of which were in the S.W.) and Wrynecks. There were S.W. gales and heavy rain from the 9th-15th. On the 19th the anticyclone collapsed, allowing in northerly air streams which halted migration. The mid-atlantic 'high' became re-established in early April and maintained the northerly airflow. Locally there were occasional sleet showers, and on April 8 a hard frost. On the 18th, the winds moved to the S.W. and the main migrant flow began, but the weather stayed cool and wet.

On April 2, an American Wigeon appeared at CVL, probably the bird that had been present at Cheddar Resr., Somerset, since Oct. 13, 1976. On the 23rd a Purple Heron also visited Chew, and a month later one was seen at Godney Moor, Somerset - two of the fourteen records nationally in spring or early summer.

Low pressure over Europe gave winds largely from the N.E. in the first half of May, with temperatures generally below normal. Flying insects were scarce, so Swift flocks tended to linger at the reservoirs where food was available, and nesting of hirundines was delayed in places. From the 17th an anticyclone became centred north of Scotland, giving dry and rather warmer weather. These weather patterns led to the arrival of vagrant species in plenty, though few seem to have reached Avon. A Buff-breasted Sandpiper at the New Grounds, Glos. on May 9-10 was the only one recorded in the country in spring; on June 1 an Alpine Swift was seen at South Cerney, Glos., and on the same day Somerset's first ever Lesser Grey Shrike was at Meare and Avon's second Squacco Heron at Hutton.

(The first was at CVL in May 1973; the only previous record for the Bristol district was of one shot at the New Grounds, Glos., in 1867.)

As in 1975 and 1976, a pair of Teal summered at CVL, but did not breed. (In Somerset, pairs summered at some ten places, and breeding was proved at two.) A male Garganey was present into May; a pair may possibly have bred - a duck and four ducklings seen distantly by SBE were thought to be of this species, but the evidence was insufficient for definite proof. Other May events included welcome proof of breeding by Barn Owls, the occurrence of two Mediterranean Gulls at the mouth of the Avon and visits to CVL by two different Marsh Harriers.

June opened with four quite warm days, but was cold and wet from the 5th-23rd and especially so from the 12th-14th. Rainfall was twice the June average, and the month was one of the coldest Junes of the century. The summer weather must inevitably have depressed the nesting success of many small species. Two notable events in Avon were the breeding of a pair of Little Ringed Plovers and a pair of Hoopoes, both first occurrences for the county; other Hoopoes summered in Avon, and a pair bred in Somerset. There were large movements of Manx Shearwaters in June.

The first week of July was warm and sunny, and the remainder cool and unsettled, with northerly winds, though rainfall was low - at Long Ashton the month's total was 11.3 mm compared with an average for July of 83.5 mm. The first part of August was warm, with air moving north across the Channel and west from Europe. After the 10th, high pressure over Scandinavia and a 'low' over Germany produced N.E. winds; a low pressure centre moving from the S. brought intense rain storms, grounding migrants moving S. From Aug. 25 to Sept. 10 a succession of deep cyclones moved across the Atlantic, bringing numbers of Pectoral Sandpipers and many rarities. The remainder of September enjoyed anticyclonic conditions, dry and rather cool with light variable winds.

Good numbers of Jack Snipe entered the country in July, and five were seen at Sand Bay. An Aquatic Warbler was ringed at CVL early in August. A Pectoral Sandpiper was reported there on the 11th; we considered on balance that the details provided did not completely clinch the identification, so the record is excluded from the systematic list. Another Wryneck appeared on Sept. 1; a Red-rumped Swallow on the 16th; a

Temminck's Stint from N. Europe was at CVL on the 19th-24th; an immature White-winged Black Tern, probably from the south, was there on the 25th-28th, one of about twenty in Britain in the autumn; a Purple Heron, also from the south, was seen in the Gordano Valley on the 29th, one of five British records in the second half of the year. On the 30th and Oct. 1, two Long-billed Dowitchers from America arrived at CVL and two weeks later a dowitcher species was seen at Aust Warth. A more mundane occurrence was a Firecrest sighting on Steep Holm on Sept. 26 - the only one for either Avon or Somerset in 1977. It is clear that this tiny species, spreading rapidly up to 1975, was severely set back in two winters with sharp cold spells.

October started with rather cool westerly weather, but by the 6th an anticyclone over Europe assisted continental migrants to this country. There were severe S.W. gales with heavy rain on the 11th and at the end of the month. Two Somerset records from just outside Avon continue the story of autumn vagrants: at Cheddar Resr. a Buff-breasted Sandpiper from America was present on Oct. 9-10, and at Brean Down a Scarlet Rosefinch from E. Europe or Asia was present from the 14th-18th, one of some fifty to reach the country in autumn. On the 25th a Long-tailed Duck appeared at CVL, and on the 26th an Avocet was seen on the R. Yeo estuary.

November was unusually mild up to the 12th, then much colder showery weather set in following severe S.W. gales. December was mild and damp for the first three weeks, with air flow from the S., but more changeable weather set in before Christmas with some gale force winds on the 23rd, which was an exceptionally mild day. A few cold days followed, but the mild weather returned on the 31st.

A Garganey remained at CVL up to Nov. 6, equalling the latest recorded date for the species there (in 1965). At Cheddar Resr. another Buff-breasted Sandpiper appeared from Nov. 2-7. The gales of the 12th produced evidence of a 'wreck' of petrels, with single Leach's at Cheddar Resr. on the 12th and at Severn Beach and the mouth of the Avon next day, when a Storm Petrel was seen at CVL. We have an indirect report of a Leach's Petrel being found dead in Bath at this time. At the end of November a Mediterranean Gull was at CVL, a Shore Lark was at Severn Beach in early December, and a Velvet Scoter was seen over Weston Bay on the 17th. Three Smew and a Red-breasted Merganser joined the numerous Goosanders at CVL, and a varied year ended with records of four divers, two Slavonian Grebes, two Shags and three Black Redstarts.

REDPOLLS

We commented in 1972 that the Redpoll might soon be breeding once again in the area, as it used to do sixty or so years earlier. In Gwent (formerly Monmouth) it returned as a breeding species in the late 'sixties, after a thirty-year gap. For an account of its return, see *The Birds of Gwent* (Gwent Orn. Soc., 1977) p. 132. In 1975 a pair bred at Stock Hill, Mendip, some two miles south of Avon, and a family party was noted in late July in the area of Dolebury and Rowberrow Warrens, either immediately inside or outside the county. In 1976 display was seen in Burrington Combe, and in 1977 five pairs were found in the breeding season in Brockley Combe, and breeding was proved at Wrington Warren (and again at Stock Hill, Somerset).

THE FUTURE

The case of the Redpolls prompts speculation as to the next species likely to appear, or re-appear, breeding in the county. The Oystercatchers showing territorial behaviour at St George's Wharf suggest one possibility (and at the time of writing this note, we know that a pair bred there in 1978). By way of genuine speculation, the present writer's list contains three candidates: Cetti's Warbler, Savi's Warbler and Firecrest. (Mere accidentals, like 1977's Hoopoes, are not deemed to count).

EXOTIC AND HYBRID WATERFOWL

Besides the Snow Geese, American Wigeon, Green-winged Teal and Ring-necked Ducks referred to in the systematic list below, there was the now usual collection of records of hybrid ducks and of exotic waterfowl which had certainly escaped from collections. A partial list follows, in order of first report:

Carolina Duck	Eastville Park, Bristol, Jan.-Dec.
Ring-necked x Tufted	CVL Jan.-Feb.; Blagdon, April.
Scaup x Tufted	CVL Jan. 15-31.
Ruddy Shelduck	Hoar Gout March 30, April 1.
Cape Shelduck	Avonmouth Sewage Works April 2-19.
Carolina Duck	St George Park, Bristol June 6.
Tufted x Pochard	Barrow Gurney Resrs., Sept. 1.
Pochard x Red-crested Pochard	Hoar Gout, Oct. 15.
Scaup (colour-ringed)	Sea Mills, Bristol, Nov. 26-Dec. 13.
Cape Teal	CVL Dec. 18
Swan Goose	R. Avon, Bedminster, Bristol, Dec. 31.

EDITORS

G.E. Clothier retired from the Editorial Committee at the end of 1976 after nine years' service. For many years up to 1963 he had been an Editor of the Somerset Report. We are glad that the meteorological expertise he gave to both will still be available to us.

SYSTEMATIC LIST

The following list is based on all Avon records sent to Bristol Naturalists' Society, Bristol Ornithological Club or Somerset Ornithological Society. To all concerned we tender our thanks. Contributors are listed at the end. We apologise to any whose names have been omitted.

The arrangement of species follows that being used in the *Handbook of Birds of the Western Palaearctic*, in course of publication. Its adoption as soon as possible was recommended in March 1978 by the Report Editors' Standing Committee and by the editors of British Birds, and endorsed by the British Trust for Ornithology. A few changes in nomenclature are also involved, and most sub-species are now included with their "parent" species.

Abbreviations: NA denotes the part of Avon formerly in Glos. and SA denotes the remainder. CVL indicates the frequently mentioned Chew Valley Lake. The notation [BBRC] following a record shows that it has been submitted to and accepted by the British Birds Rarities Committee.

ADDENDUM

The following records could not, for various reasons, be included in their appropriate places.

PURPLE HERON (to be added to species note)

SA One, Gordano Valley, Sept. 29 (RSC). [BBRC]

AMERICAN WIGEON *Anas americana* (to follow Wigeon)

SA A male, CVL, April 2 (TEB, AP) - presumed to be the bird present at Cheddar Resr., Somerset from Oct. 12, 1976, last seen there on Feb. 21. [BBRC]

GREEN-WINGED TEAL (to be included under Teal)

SA A drake Teal showing the characters of the N. American or "Green-winged" race *Anas crecca carolinensis* was present at CVL from Nov. 17 into 1978 (KEV *et al.*). [BBRC]

WRYNECK (to follow Hoopoe)

NA One found in garden at Yate, Sept. 1, was tended at a bird farm but died on 6th (GY).

SA Single birds at Bristol Crematorium (AJB, PJTB) and at CVL (RMC) on March 12.

RED-THROATED DIVER

SA One, probably this species, off Sand Point, Dec. 31 (TBS).

GREAT NORTHERN DIVER

SA CVL: immature, Nov. 4 to year-end and a second, Nov. 17-Dec. 17; adult also present, Nov. 18-27 (AHD, BR, HER, KEV *et al.*).

LITTLE GREBE

NA Single broods at Tortworth Lake and Hoar Gout (Avonmouth).

SA Very few early in year - max. of six at Barrow Resrs., Jan. 12 and eight at CVL, March 12. Broods reported from Blagdon (3), CVL (4) and Hunstrete (1). Peak counts in October - 54 at CVL on 15th, but only four there and 11 at Barrow Resrs. in December. Noted in autumn, St George's Wharf and on Avon in City Docks and upstream.

GREAT CRESTED GREBE

NA Single birds off Severn Beach, July 7 and Northwick, Oct. 15.

SA Bred at Blagdon Res. (2 broods), CVL (33 broods) and Hunstrete Lake (pair reared 2 broods). Usual autumn flock at CVL (300-450).

SLAVONIAN GREBE

SA One in breeding plumage, CVL, April 17 (PJC). Single birds also at CVL, Nov. 18 (BR, KEV), Royal Portbury Dock, Dec. 18 (MD,JHol, GU) and at Barrow Gurney Reservoirs on 30th and 31st (MD, DE).

BLACK-NECKED GREBE

SA One, CVL, Aug. 26-Sept. 5 (JA, NAL, KEV).

FULMAR

NA One off Severn Beach, May 24. One off Aust and three off New Passage, June 6.

SA Reports (24) from Estuary, half from Brean Down between Apr. 20 and Aug. 29; including nine sightings of up to three together on Apr. 23 four there on June 7 and three off Sand Point on June 5.

MANX SHEARWATER

NA Large movement, June 6: 300 moving N. off Severn Beach, a.m., and at least 1,000 shortly afterwards off New Passage (RGT, BL); all had returned down-channel by 14.05 hrs. Another movemetn July 31: seven off Chittening, and 150 off Severn Beach, with 56 at latter next day.

SA 18 reports, April 23 to July 27; largest numbers June 6, when 47 off Brean Down, 225 off Sand Point and 45 near Steep Holm. Other large counts: 44, Brean Down, April 23; 76, May 21 and 200, July 1; 126 off Sand Point, May 21 and 125 next day.

STORM PETREL

SA CVL: one, November 13 (NT).

LEACH'S PETREL

NA One off New Passage, Nov. 13 (BL, RGT); one found dead nearby at Severn Beach, same day (PDB).

SA One, mouth of R. Avon off St George's Whart, Nov. 13 (WGB).

GANNET

NA Sixteen between Severn Bridge and New Passage, July 1 (RGT); two in same area, flying up-river, Oct. 31 (HRHL).

SA Two off Brean Down, April 23; ten reports, Weston area, June 12 - July 31 (max. 18, July 1 - probably those seen in NA) dead adult, Weston, Oct. 11 (RA). Three off Steep Holm, Aug. 7 (BES).

CORMORANT

NA Usually single birds; up to nine near Severn Beach in Sept. and up to eight, Oldbury. One or two, Avonmouth Sewage Works, mid Sept. to mid Nov., and one in Bristol City Docks, Sept. 23.

SA High winter counts again at CVL: up to 89 in Jan., 50-60, Feb.-March; 39, early April but only nine, mid-May; up to 25, August, rising to 67, December. Regular at Blagdon Res. (under ten). Usually single birds on coast, but 12 off St George's Wharf on May 1 and 14 in Woodspring Bay, Sept. 3. On Steep Holm, AJP found 45 occupied nests in June.

SHAG

NA Severn Beach: one, July 2 (NTL, RGT); one, Dec. 19 (PJH).

SA One off Sand Point, Nov. 16 (JW). Immature off Clevedon, Nov. 28 - Dec. 18 (NAL, PJH *et al.*) but two, Dec. 6 (HER).

BITTERN

SA One present at CVL, noted between Jan. 16 and March 26th.

SQUACCO HERON

SA One seen at Hutton Ponds, Weston-s-Mare on June 1 (AC, JW *et al.*) - second record for Avon (cf. Proc. BNS 1973 p. 40) /BBRC/

GREY HERON

SA Seventy-eight occupied nests reported (16 at Uphill, 38 at Cleeve, 10 + 4 "possible" at Newton Park and 14, Portbury). Reported widely throughout County, including birds raiding lagoon at Avonmouth Sewage Works and goldfish ponds in Bristol.

PURPLE HERON

SA One seen in flight, CVL, April 23 (KGH, AM, RS). /BBRC/

MUTE SWAN

NA No breeding records received. Largest herds: 40, Bristol Bridge, March; 25, Feeder Canal, Bristol, Dec. 28.

SA Broods reported: (no./young) CVL (4/18), Blagdon res. (1/4), Claverton (1/6); Backwell Ponds (1/4), Puxton (1/6), Portbury Wharf (2/9) and Hartcliffe, Bristol (1/4); nests also reported at Chelvey and Portishead Lake. At CVL, up to 37 to end May; 46 - 73, June to September, 29 on Oct. 26, 17 on Nov. 17 then fewer than 10 to end of year. Other reported herds: 34, Blagdon res., Sept. 17; Bucklands Pool, Backwell: up to 19 in Jan., falling to four in May, rising in autumn to 18 by December; at least two killed by wires, which were then fitted with orange markers.

BEWICK'S SWAN

NA Noted in flight over Northwick (21 down-river, Jan 24 and six up-river, Feb. 6) and over Lawrence Weston (one, Oct. 30).

SA Main numbers at reservoirs: 37 at Blagdon, Jan. 28, 30 on Feb. 13, and up to ten from Oct. 28 to end year, with 31 on Dec. 26; 141 at CVL on Jan. 2, falling to 27 by 30th, and up to 13 from Oct. 30 to end year. Elsewhere, four, Woodspring Bay, Jan. 23; up to 25, Axe Estuary, March; seven, Kenn Moor, Dec. 5 and Sand Bay on 31st.

WHITEFRONTED GOOSE

Again very few records: 20 over Arno's Vale, Bristol, Feb. 6; one immature at Northwick (NA), April 15/16 and another, Dec. 4 and 10th. Two adults and one immature, Blagdon Res. (SA), Nov. 29.

GREYLAG GOOSE

SA CVL: seven, Feb. 12 (BR); two, June 18 to Sept. 24, then one to Nov. 20; one, Blagdon reservoir, Oct. 25 (KEV).

SNOW GOOSE

Seven 'blue phase' birds flew over CVL on Feb. 12 and three over R. Severn near Severn Beach on June 14 and 15. Two 'white' birds flew over Barrow Gurney on Nov. 6th. All were probably feral.

CANADA GOOSE

NA One over R. Avon, Sea Mills, Oct. 11th.

SA Present all months at CVL; max. count was 49 on June 28; four broods (totallying 12 young) present in May. Up to 13 birds seen at times at Blagdon Res. were almost certainly from CVL.

BARNACLE GOOSE

SA One at Blagdon res., Oct. 25 and four, Dec. 26; single birds at CVL on Nov. 17 and 20th.

SHELDUCK

May population *c*. 100 in NA and 300 in SA. Estimated young produced: 64-81 in NA and 130-142 in SA, incl. very early brood of seven at Clevedon, May 8. Brood of 12 removed from hard shoulder of M5, Tickenham; adult dead nearby (June 19). Steep Holm: max. of 15, May 2; pair probably attempted to breed - no proof of success (AJP). Reservoirs: up to three, Barrow Gurney; two, Blagdon; 15, CVL. Two pairs at CVL in breeding season, one brood of eight produced.

WIGEON

NA More reports than usual; max. 130 near Aust, Jan. 1 and 80 on 3rd. Six other counts over 20 from Chittening, Aust and Oldbury, including 24 at latter, April 10; last record - 2, Severn Beach, May 23. Present in autumn from Aug. 29 (5, Northwick) but very few - no more than four at any one site except 16, Northwick, Dec. 4.

SA Under 650 in area in January (but 900 at CVL on 30th), only 405 on Feb. 13 and 355 a month later; down to six by mid-April. A male summered at CVL. First autumn record: two, mouth of R. Avon, Aug. 21; reservoir numbers stayed low (max. of 100 or so) until influx in November; area total about 530 by mid-December.

GADWALL

NA Three pairs, Tortworth Lake, Jan. 22; pair off Aust, Oct. 16.

SA Some 80 in area, early January, but only 50-60 in mid-March;

KEV reports 96 at CVL on Apr. 29 and also on May 16. One brood at Blagdon and ten (74 young) at CVL. Very high count of 255 at CVL, Aug. 16; area total 165 on Sept. 17 and 78 on Dec. 17th.

TEAL (see Foreword)

NA Few coastal records, but 60 at Hoar Gout in January. First in autumn - one at Chittening, Sept. 3; area total then rose to 70 in October-November and 145 on Dec. 17 (of which 115 were at Aust).

SA Present all year, but still no proof of breeding. Counts show large variation - e.g., 750 at Blagdon, Jan. 4, but only 300 on 15th , when 275 at CVL. Some 775 in area by end August, rising to 1,950 in mid-October but only 1,450 in mid-December.

MALLARD

NA Very few until August, when over 100 on coast, rising to 220 on Sept. 3, but falling to 80-100 in December. Nine nests or broods reported.

SA Bred at 11 sites; 66 broods counted. Largest numbers in Sept. when 1,500 or more at Blagdon and Chew Valley resrs., 60 at Sand Bay and 250 at mouth of Avon in November, of which 100-120 sometimes moved up-river as far as Sea Mills.

PINTAIL

Usually very scarce on coast - only one NA report (two, Aust, Jan. 17), but five records from St George's Wharf including 16 on Jan. 9. Up to 34 at Blagdon Res. and CVL in January, then 58 at CVL on 30th and 61 on Feb. 15; max. of seven thereafter, with three still present on May 7. First autumn birds: one at CVL or Blagdon from July 10 and one, Sand Bay, Aug. 30. Area total under 15 until mid-October, but 40-45 from 16th-21st, falling to 21 by month-end. Later counts at Blagdon varied from four to 25; at CVL they did not exceed 13 in November and six in December.

GARGANEY (see Forword)

SA CVL: two March 27 (BR): single males, nine dates in April-May; up to 13 in August, seven on Sept. 5 then one or two (AM, CVRS *et al.*); one male, most of October (KEV) and a female on Nov. 6 (AHD, KEV). Blagdon Reservoir: three on Aug. 7 and two at end of month.

SHOVELER

NA Uncommon. Pair, Hoar Gout and three, Northwick on Jan. 22; one at Oldbury, April 10. Eight, Severn Beach, Nov. 28; three (one male), Northwick, Dec. 3 and three (two males), Chittening, Dec. 10.

SA Up to 60 at reservoirs to end March, then 20 or fewer to June 3; next record was 36 at CVL, July 5; good autumn numbers - 70 at Blagdon on Aug. 7, and September counts from 20 to 175 (while CVL numbers varied from 20 to 380); reservoir total 400, Oct. 15 (but 460 reported at CVL on 26th), only 190 by mid-November and 27 in December. Portbury and St George's Wharves: up to 23 to end of March and two, April 10; four on Aug. 14 and on Nov. 13, and 22 on Dec. 11. Eight, Bucklands Pool, Backwell, Dec. 10 and 11.

RED-CRESTED POCHARD

SA Male at CVL, April 21-23 (GWR, RS *et al.*) and at Blagdon Res. on 29th (HRHL). Male in eclipse, Blagdon, Sept. 11-24 (PJC *et al.*).

POCHARD

NA Four, Tortworth Lake, Jan. 2 and two on 22nd. Two, Hoar Gout, Oct. 15; 14 on 22nd; none in November; but up to ten in December.

SA Numerous early in year - counts or estimates of 700-2,000 at Blagdon Res. and 610-5,000 at CVL; most synchronised counts give *c.* 3,000 in area, Jan.-Feb. and 1,000 in early March, but only 160 on 12th and under ten, most of April and May. Influx in June - 59 on 3rd and over 150 on 25th; peak of 400 in September, but under 200 by December. Very few elsewhere: Portishead (1), Bucklands Pool, Backwell (12 in Dec.), Newton Park (1), Chew Magna Res. (12 in Dec.) and Hunstrete Lake (1). Broods of 3 and 4, CVL.

RING-NECKED DUCK

SA Of the three males at CVL in late Dec. 1976, the immature spent the first two weeks at Blagdon Res., then returned to CVL, where a fourth appeared, Feb. 6-12; at least two stayed to Feb. 27, and one to March 27 (AHD, AM, MR, KEV *et al.*). The Ring-necked x Tufted hybrid first seen at CVL Dec. 19, 1976 stayed into April, then at Blagdon Res. until at least the 10th (JBOR, KEV *et al.*).

TUFTED DUCK

NA Tortworth Lake: up to 35, January; 17, March 20; 22, April 3; one pair bred. Hoar Gout or adjoining Avonmouth Sewage Wks: present all year except August, mostly two or three but up to 12, October and November. Single birds, Severn Beach area, May 27 and Oct. 15.

SA Reservoir totals 420-470, Jan.-April (but 618, CVL, Jan. 30 - AM). Bred only at CVL (at least 18 broods). Up to 700, September to October, only 300 in mid-November and 260, December (though KEV reported 520-555 at CVL, December). Very few on smaller waters - maximum of 52 at Litton.

SCAUP

SA CVL: female, Jan. 23-Feb. 19; male, March 6-13, moved to Blagdon by 27th, where a second male joined it, April 3-8; both were at CVL on 12th and 13th. Female or immature, CVL, Oct. 30.

EIDER

NA Sixteen (three males) off Aust, May 7 (BL, NTL) and eight on the 8th (NTL, RGT).

SA Three, Woodspring Bay, Jan. 4 (JW) and one, May 28 (TBS). Party of five (one male) off Brean Down on May 8 (JW).

LONG-TAILED DUCK

SA Female, Barrow Gurney Resrs., Oct. 25-Nov. 13 (DSE).

COMMON SCOTER

NA Male, Northwick Warth, April 23-May 1, and a pair, May 28. Females or immatures; Chittening, July 30/31 (one) and New Passage, Oct. 4 (three). Male, Hoar Gout, Aug. 20.

SA Sixty to N. off Brean Down, April 23 (LT, NT) - largest Avon count; also seven, June 14 and one, July 1. Other coastal records from Portishead (male, Mar. 19, female, April 2 and three, May 15), Birnbeck I., W-s-M (two, July 16 and seven on 23rd) and Clevedon (two, Oct. 18). At CVL, single males on June 25 and Oct. 2, and a female or immature bird on Sept. 3.

VELVET SCOTER

SA One to NE past Brean Down, Dec. 17 (GU).

GOLDENEYE

No reports from NA. One at Sand Bay, Jan. 3. Reservoirs: highest totals were 49 on Feb. 13 and at least 40 (flock at CVL), April 24; three still at CVL, May 7, with immature male to 27th and female on 28th; present in autumn from Oct. 11, with nine on 23rd; later totals mostly 12-17, but up to 42 in December (KEV).

SMEW

SA CVL: three (two males) up to Feb. 13; the males stayed till March 26 and one to 30th; female or immature from Oct. 29, joined by second from Dec. 9 into 1978 (one, possibly this bird, seen at Blagdon on Nov. 15); male in eclipse also at CVL, Nov. 5-Dec. 24.

RED-BREASTED MERGANSER

SA Blagdon Res.: two, Nov. 16 (KEV) and one on 20th (SBE). CVL: one present, Nov. 18 into 1978 (PJC, AHD, JCL *et al.*).

GOOSANDER

SA CVL: many January records of up to 32 and one of 43; up to 29 in February and 20 in early March; only eight by 27th, and one as late as April 17. First autumn records: one at Blagdon Res., Nov. 16 and four, Barrow Gurney Resrs., on 27th. At CVL, rapid rise to 35 by end-November; 54, Dec. 9-11 and 52 on 18th, but only 33 on 28th; (but KEV reported 64, Dec. 14 and 60 on 28th). Four, Barrow, December.

RUDDY DUCK

SA County total 169 in Jan. (155 at CVL), 135 in Feb., 126 on March 12 but only 23 by 27th. Up to nine at CVL during summber but no proof of breeding. Slow autumn rise from 34, Sept. 12 to 43 in early November, 90 on 12th and 159 on 20th; further influx to 200 by Dec. 17, with frequent movement between CVL and Blagdon Reservoir.

MARSH HARRIER

SA CVL: Female or immature, May 1 (AM); near-adult female, May 16 (RJP *et al.*); female or immature, Oct. 20 (KEV).

HEN HARRIER

SA A female, Blagdon, Jan. 7 (DW); one, CVL, Nov. 21 (NAL). One at Brean Down, just outside Avon, on Dec. 17 (GU).

GOSHAWK

SA A male, CVL, Feb. 15 (DB).

SPARROWHAWK

Records from 36 one-km squares (of which 11 in NA); proof of breeding in three areas (10-km squares ST36, 46 and 57).

BUZZARD

NA At least two breeding pairs, but very few records from the Cotswolds during breeding season.

SA Breeding-season records suggest minimum of twelve pairs.

OSPREY

SA One, Hinton Blewitt, July 28 (DH).

KESTREL

Breeding-season reports from *c.* 70 localities (34 in NA). At least 16 (possibly 24) pairs within Bristol City boundaries (RLB); nests found at Hartcliffe, Lawrence Weston and Broad Plain, and one on electricity pylon at Hambrook, just outside boundary. Nests or fledged young also noted at Cromhall and Tockington in NA, and Uphill and Newton St Loe (SA). Brood ringed at Cromhall, June 1975 (PJC) yielded these recoveries:

Denton, Newhaven Suffolk (195 km ESE), Oct. 22, 1975
Barton, Bridford on Avon, Warwick (80 km NNE), Dec. 27, 1975
Chalford, Stroud, Glos (23 km NE), June 15, 1977.

MERLIN

NA Chittening: one, Feb. 17 (HER) and one, Oct. 25 (GU); one, Pilning, Sept. 9 (BL).

SA All single birds. Bristol: Hartcliffe, Jan. 1 (TEB) and Hengrove, Jan 20 (PGF). CVL: several records, Jan. and March; Sept. 4, Oct. 22 and 26 and Nov. 6 (various observers). Portbury, March 5 (TBS). Axe Estuary to Sand Point: March 19 (RA), Oct. 4/5 (BR), 9th (RA), Nov. 13 (PJC). St George's Wharf, Aug. 30 (WGB) and Dec. 18 (GU). Steep Holm: Sept. 18 (AJP). Burnett, Nov. 27 (PJC).

HOBBY

NA One pair bred. One, near Aust, July 4 (RGT); two sightings in S. Cotswolds, July 19 (TEB).

SA One pair bred. Fifteen records of one or two, CVL area, April 25-Sept. 23; single birds in two other localities during breeding season. Also single birds at Sea Mills, May 24 (TBS); Knowle, Bristol, May 25 (PJTB); Yeo Estuary, May 28 (TBS); Steep Holm, Aug. 23 (AJP); Hengrove, Bristol, Aug. 28 (PJC); Claverton (two) over Avon valley, Sept. 4 (RMC) and Dundry, Sept. 23 (DW).

LANNER

SA One, CVL, Jan. 25 and Feb. 12 (HRHL, DB). Probably the one seen in late 1975 and 1976, considered to be a falconer's escaped bird.

PEREGRINE

NA Immature, Chittening, chasing waders, Aug. 18 (GY) and another there, Oct. 6 (RGT); immature, New Passage, Sept. 4 (TBS).

SA Single birds unless otherwise stated. Steep Holm (*per* AJP): May 1; Aug. 26; Sept. 18-Oct. 26 (immature); Sept. 19-Oct. 23 (female). Sand Point, Aug. 14 and Sand Bay, Sept. 12 (CBJ); Clevedon, Nov. 13 (female) (HER). CVL: Oct. 29 (RMC); Oct. 31 (adult female) (RSH); several records in November/December; at least two birds, one adult and one immature, present (both seen, Nov. 20 and Dec. 8).

RED-LEGGED PARTRIDGE

SA Pairs recorded at Marksbury Plain, March 13 and May 8, and at Farmborough, June 18; adult and juvenile, Hunstrete, Aug. 23; one, Weston in Gordano, Oct. 1 and five, Farmborough, Nov. 27.

PARTRIDGE

Reported in larger numbers than for the last five years.

NA Coveys: four and twelve, Jan. 3 and eleven, Nov. 27, Tormarton; six, Feb. 23, Cromhall. A pair, Marshfield, June 23.

SA Breeding season reports from CVL (female and 8 young), Stanton Prior, Chewton Keynsham and Compton Dando. Coveys: four, Stantonbury; 18, Uplands; and six, Marksbury Plain, all on Nov. 27; seven, Newton St Loe and nine, Burnett, both on Dec. 31.

QUAIL

Breeding-season reports of birds heard calling at Marshfield (NA) and Stanton Prior and Farmborough (SA).

WATER RAIL

Single birds: Lawrence Weston (NA), Sand Bay and Kenn Moor; up to four, CVL and three, Blagdon. No breeding season records.

SPOTTED CRAKE

SA CVL: one, Aug. 29; probably same one trapped, Sept. 13 (CVRS).

MOORHEN

Widely distributed. Breeding reports include at least 13 broods at CVL and one at Victoria Park, Bath.

COOT

NA Bred at Tortworth Lake, Littleton Pits and Hoar Gout.

SA Bred at Portbury Wharf, Hunstrete and Newton Park Lakes and the reservoirs; at CVL 100 pairs produced 28 broods with 71 young - a poor result (KEV). Table shows monthly maximum counts at CVL and Blagdon.

	Jan	Feb	Mar	Apr	May	Jul	Aug	Sep	Oct	Nov	Dec
BL	245				335					536	
CVL	1004	707	610	485	410	860	1315	1129	524	395	335

OYSTERCATCHER

NA Up to five, Chittening - Aust, all months except March, but 10 at Severn Beach on Aug. 6; four at Littleton Warth on July 31 and three at Oldbury, Aug. 5/6.

SA Present on coast, Jan. 1-May 8 and Aug. 20-Dec. 31; also two at St George's Wharf, May 13-June 8, showing territorial behaviour. Largest counts: 124, Axe Estuary, Feb. 5 and 102, Nov. 1; 55, Sand Bay, March 27 and 81, Oct. 22.

AVOCET

SA One at Yeo Estuary, Oct. 26 (GS).

LITTLE RINGED PLOVER

SA A pair reared three young (locality withheld). One, CVL, May 26; Autumn records, July 29-Aug. 28, mostly immature birds; maxima of three at CVL, July 29/30 and Aug. 27, and two, Portbury Wharf, Aug. 27th.

RINGED PLOVER

Monthly maxima in chief areas (Severn Beach - Chittening, St George's Wharf, Sand Bay, Axe Estuary and CVL):

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SB-C	50	50	20	70	142	40	26	575	600	66	44	58
SGW								38			26	
S Bay	10	15			55	18	16	190	160	25	10	14
Axe E	26	15										
CVL				1			1	10	37	18	2	

GOLDEN PLOVER

NA Coast: four, Severn Beach area, Jan. 1, two, April 27 and one or two, Aug. 2-Oct. 6. Inland: 50, Hawkesbury Common, Jan. (MJP); 300, Westerleigh Common, Feb., and 250 in Dec. (JDRV); 150, Sodbury Common, Nov. (JDRV).

SA Noted from Jan. 1 to April 26 and Aug. 16 to year end. Coast: up to 60 at Clevedon, Jan. to March and Nov., and 300 in December; 550, Axe Estuary in Jan., 160 in Sept. and 250 in October. Inland: up to 350 at Kenn Moor, Jan., Feb. and Oct. to Dec., up to 217 at Marksbury Plain, Jan. to April, and up to 140, Nov. and Dec.; at CVL, fewer than ten usually, but 45 on Oct. 29 and up to 130 in December. Six in Hengrove Park, Bristol on Jan. 30th.

GREY PLOVER

NA Chittening to Aust: two up to Jan. 29, one on May 27 and three on 31st; up to three on seven dates, Aug. 7-Nov. 27th. Three at Oldbury-on-Severn on April 10th.

SA Noted on the coast in all monthes except March and June. Up to nine at Sand Bay in January, otherwise not over five; up to four at Portbury Wharf, May 8-June 19; three, Yeo Estuary, Nov. 3rd. Reservoirs: one at CVL, May 29 and up to three, Sept. 20 to Nov. 20; one at Blagdon, Dec. 29th.

LAPWING

NA Only breeding report was from Avonmouth. Northwick: 5,000 on Jan. 3; 300, July 15 (earliest autumn flock); peak of 1,000 (Aug. 13 to Sept. 8) then 500 to year-end. All other reports were of fewer than 200 birds.

SA Breeding reports from Portbury Wharf area, Abbots Leigh, Ashton Marsh, (Bristol), Nailsea Moor, Clevedon, Blagdon Resr., Stanton Prior and Shockerwick. Largest counts: Axe Estuary - 500 in Jan., 800 in Aug., 1,400 in October and 1,550 in December. Yeo Estuary - 1,200 in September; Portbury Wharf area - 1,100 in Feb. and 1,500 in December; CVL - 1,000-1,500, July to end year.

KNOT

NA Twelve records, Severn Beach to Chittening, March 5 to Dec. 11, mostly of up to four but twelve on Aug. 26 and eight on 27th. 150, Northwick, Aug. 1st.

SA Up to 80 at Sand Bay and Axe Estuary in January and February; four, Clevedon, May 24; eleven records from Aug. 17 to year-end mostly of fewer than six birds, but up to 15 at Sand Bay, Aug. 27 to 29th and 18 at Clevedon in December. Reservoirs: up to three at CVL on ten dates, Aug. 20 to Oct. 23; two at Blagdon, Dec. 24th.

SANDERLING

NA Noted, Severn Beach - Chittening, April 23-June 4; usually up to eight, but 14 on May 16 and twelve on 18th (RGT); one or two in July and August; unusual winter record: one, Dec. 11 (NTL, RGT).

SA One winter record: one at Axe Estuary, Jan. 8 (RA). Noted on coast, April 18 to Sept. 17, usually only one or two, but nine at Sand Bay on May 22 (RA), five on Aug. 27 (RA) and ten on Sept. 2 (CBJ); also five, R. Axe, Aug. 27 (RA). Inland: one at CVL on May 6 and two on the 11th and 12th (KJH, KEV).

LITTLE STINT

NA Two, Severn Beach, Aug. 17 (HRHL) and one on 29th (TBS). One at New Passage, Sept. 25 (TBS).

SA St George's Wharf: two, Oct. 8 and one, Nov. 13 (WGB). Up to five at CVL, Sept. 20-Oct. 20, with eight on Sept. 24 and seven on 28th (AM, KEV). One, Blagdon reservoir, Dec. 28 (AM).

TEMMINCK'S STINT

SA One at CVL on Sept. 19 (RSH) and on 23rd-24th (AHD, KGH, KEV).

CURLEW SANDPIPER

NA Severn Beach: one, July 30 (HRHL) and Aug. 7 (NTL), and three, Aug. 23 (TBS). No other records.

SA Nine coastal records of up to three, Aug. 1-Sept. 14; also eight at Portbury Wharf, Aug. 3 (TBS) and at Sand Bay on 17th (RA). CVL: one or two, Aug.31-Oct. 26, with five on Sept. 17 (HER, KEV).

PUPPLE SANDPIPER

Reported only from Severn Beach to Chittening (NA), where up to three were present to May 12 and after Dec. 3 and from Sand Bay (SA) - two, Nov. 5, one on 15th and four on Dec. 31st.

DUNLIN

The table shows monthly peak counts from (1) Oldbury-on-Severn to Littleton; (2) Severn Beach to Chittening; (3) Portbury Wharf and St George's Wharf; (4) Clevedon to R. Yeo; (5) Sand Bay; (c) Axe Estuary; (7) Chew Valley Lake.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Jan	550	7,000	1,400	0	3,000	3,000	3
Feb	500	7,000	2,200		3,000	400	1
Mar		7,000	70	200	2,500		2
Apr	30	600		500			1
May		600		1,000	65		7
Jun	12	25	1		26		5
Jul	50	260	61		450		3
Aug	50	500	75	50	500		20
Sep		1,000	1	100	160	250	17
Oct	210	1,000	250	950			25
Nov	200	3,500	1,000	2,000	1,800	500	80
Dec	450	3,500	2,300	1,300	2,000	1,750	65

RUFF

NA Single birds at Severn Beach, Aug. 17 (HRHL) and 27th (PJC).

SA Coast: one, Woodspring Bay, Aug. 15 (JW); one, Sand Bay on 17th (RA); two, Axe Estuary, Sept. 18 (RA). Reservoirs: noted at CVL and Blagdon from Jan. 1 to Feb. 12 (14 on Jan. 1 and eight, Feb. 12, otherwise up to four) and again from July 9 to year end (usually up to eight, but 14 on Aug. 16th).

JACK SNIPE

NA Noted at Chittening and Aust up to March 6 and from Oct. 9 onwards; generally one or two, but five at Aust on Jan. 1 and ten on 22nd (RGT). Two at Hoar Gout on Jan. 8 and one on 22nd.

SA Coastal reports of up to three, to April 24 and from Nov. 6, but eight near Clevedon in February and there and at Sand Bay in December. One at Hengrove Park, Bristol, March 20 (PGF); one at Farmborough, Nov. 40 (AML). Single birds at CVL on April 24 and on five dates, Sept. 20-Nov. 27, but three on Oct. 25th.

SNIPE

NA Noted up to March 22 and from July 17 onwards, with parties of up to eight on the coast; at Avonmouth Sewage Works, up to 30 in former period, and up to five in latter (though nine in Aug.). Scattered inland records were of one or two only.

SA Coastal records until March 27 and from Sept. 18 onwards, with maximum of 60 in each period. Inland: up to four at Hengrove Park and Ashton Vale, (Bristol), January and February; 300 at Kenn Moor in January and up to 100 in November. Reservoirs: present at CVL and Blagdon up to April 15 (maximum of six) and from July 3 onwards (up to 70 in August, 100 in September, 175 in October then some 50 to end of year).

LONG-BILLED DOWITCHER

SA Two birds present at CVL on Sept. 30 and Oct. 1 then moved to Blagdon reservoir where they remained into 1978 except for occasionaly brief returns to CVL (KEV *et al.*). /BBRC/

DOWITCHER species

NA A bird seen at Aust Warth on Oct. 16 (PJC, BL, NTL) was tentatively identified as a Long-billed Dowitcher, but in the opinion of the BBRC, the details did not entirely exclude the possibility of its being a Short-billed Dowitcher. /BBRC/

WOODCOCK

NA Single birds reported, in March and from Aug. 11 onwards, from Rockhampton, Thornbury, Tortworth and St George (Bristol).

SA Reported in January from Stantonbury Hill (two) and Leigh Woods; in May from Cadbury Camp Lane, Capton-in-Gordano; and in November from Priston.

BLACK-TAILED GODWIT

NA Northwick: 22 on April 26 (RGT); ones and twos, Northwick to Chittening, Sept. 4-Oct. 22nd.

SA One at Axe Estuary, Jan. 8th. Up to four, Portbury Wharf area and Sand Bay, July 17-Sept. 10th. At CVL, one on April 9, two on July 27 and one on Sept. 10th.

BAR-TAILED GODWIT

NA Noted only in Severn Beach area: three, April 30; ten, April 26 and single birds July to December, with three on Sept. 3rd.

SA Noted on coast March 19-May 7 (four records of 1-3) and Aug. 3-Nov. 13 (seven records of one bird and two of two birds). CVL: one, May 26; three, Oct. 2 and then one until December.

WHIMBREL

NA One at Severn Beach, April 26, and two on May 19 and 23rd; some 250 seen moving up-river very high, May 4 (NTL). Noted, Aust to Chittening, July 10-Aug. 18, usually single birds but five on two dates. Three, Inglestone Common, August 3rd.

SA Spring passage April 15-May 11; largest counts were 56 on April 27, 50+ on May 1 and 60 on 7th, all on coast; and 18 over Nailsea Moor, May 2; one at CVL, April 17 and seven on May 11th. Small return passage, July 10 to Sept. 11; with maximum count of six on coast; six, Kenn Moor, July 31 and again on August 6th.

CURLEW

The table shows the peak monthly counts from Littleton-on-Severn, Severn Beach to Chittening, Sea Mills, Portbury and St George's Wharves, Clevedon to R. Yeo, Sand Bay, Axe Estuary and Chew Valley Lake.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
L-on-S	100	20	24	10			2		1	200	10	25
SB - C	105	100	64	9	nil	28	150	98	106	110	61	88
Sea M.	45	18	4						11	33	37	29
StG/PW	31	36	75				50		22	35	24	25
Cl-Yeo		90			15				20	60	32	17
A. Bay	150	150					80	150	130	80	4	114
Axe E.	180	260										
C.V.L.			1	1	1		1	1	1		1	

SPOTTED REDSHANK

SA Reservoirs: single birds at CVL, April 17 and July 5, one or two in August, up to eight in September and October; one or two there and at Blagdon, late October to end of year. Coast: one or two at Sand Bay in August and one at Portbury Wharf, August 25th.

REDSHANK

Peak monthly counts. For key to localities see Curlew.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
L-on-S	13	16								5	5	17
SB - C	300	300	300	1	nil	2	200	300	100	300	250	250
Sea M.	90	60	72	6		10	1		60	100	50	100
P/StG	60	120	9		12	50	170		100	125	170	275
Cl/Yeo						24			150	80	50	30
S. Bay	150	45					100	140	84	900	130	70
Axe E.	85	70								165	45	60
C.V.L.	10	10	10				2	2	2	2	2	

Two, Blagdon reservoir, April 10 and one, Oct. 7th. Bred at Portbury Wharf and probably at Yeo Estuary and on Nailsea Moor.

GREENSHANK

NA One, Littleton-on-Severn, April 29; one, Shockerwick, May 8; one or two, Severn Beach to Chittening and at Avonmouth Sewage Works from August 6 to September 6, with five on coast, Aug. 11th.

SA Noted on coast, July 5 to October 25; generally one or two, but six at Axe Estuary on August 21, and seven at Portbury Wharf in August and

September. Present at CVL, July 5 to October 2; one or two in July and October, up to 13 in August and up to nine in September. One at Blagdon reservoir, August 15th.

GREEN SANDPIPER

NA Single birds, Aust to Chittening, July and August. Up to five at Avonmouth Sewage Works and Hoar Gout, July 6 to year-end.

SA Records (15) from January to April 12 were mainly from CVL and of single birds; largest count was four there, Feb. 26th. Present again at reservoirs from July 27, mostly at CVL, with 15 on July 31, up to 26 in August, ten on Sept. 9, then up to six. Present on the coast, July 3 to year-end, usually up to six but nine in July and 18 in August in the Portbury Wharf area.

WOOD SANDPIPER

NA One, Northwick Warth on Aug. 7 (RGT).

SA Coast: five at Sand Bay, Aug. 17 (RA); single birds, Portbury Wharf, Aug. 27-Sept. 4 (TBS) and six nearby on 4th (WGB). One or two at CVL, July 21-Sept. 15 (many reports); single birds there and at Blagdon reservoir, Oct. 1 (KEV).

COMMON SANDPIPER

NA At Sea Mills, up to eight, February to April and up to five, July 15-December, with ten in August. At Hoar Gout, two in May and up to seven in August. One on R. Avon, Hanham, July 10 (RLB). On coast, Aust to Chittening, up to six from July 16 to Aug. 21st.

SA Noted on coast (21 records), April 24 to May 8 and June 26 to December 18, usually up to six birds but up to 11 in Portbury Wharf area and up to 17 in Axe Estuary, July and August. Four, Steep Holm, Aug. 21st. Reservoirs: up to 11 at CVL in April and May, 30 in July and August, seven in September, then maximum of four to year-end; at Blagdon, three in May and two, August and September.

TURNSTONE

NA Present, Severn Beach to Chittening, Jan. 1 to June 3 and July 13 to year-end. Maximum counts on passage were 200 in first half of May and 225 in late August and early September. Up to 20 were noted at Oldbury-on-Severn in February.

SA Noted on coast up to June 5 and from August 2; largest numbers were near Clevedon, with up to 20 in March and April, and 26 on Dec. 15th. At CVL, two on May 1, and single birds on five dates between July 28 and September 4, with seven on August 9th.

GREY PHALAROPE

SA One at CVL, seen on Sept. 12 (AM) and 13th (N&LT, KEV).

ARCTIC SKUA

SA Two off Sand Point, April 22 (JW). Four off Brean Down, April 23 (N&LT) and one, June 12 (BES) Four CVL, September 9 (NAL).

GREAT SKUA

NA One flying up-river at Chittening, July 21 (HER).

SA Two headed up-channel off Brean Down, July 19 (BR), towards Avon waters; one off Steep Holm, Aug. 8 (BES); one flew up-channel off Sand Point, Nov. 3 (JW). Two, CVL, Sept. 16 (AM) left to SW.

MEDITERRANEAN GULL

SA Two second-year birds, St George's Wharf, May 1 (WGB); adult at roost, CVL, noted Nov. 4, Dec. 20, 23 and 27th (KEV, RMC *et al*).

LITTLE GULL

NA Records of single birds at Avonmouth Sewage Works, Mar. 22-23 (BG) and an immature bird at New Passage, Aug. 25 (BL, NTL).

SA CVL: three (one adult), Mar. 23 (JD, MAB); up to four in April; three immature birds noted, May 6-July 12 (one trapped and ringed), but four present, May 26 and an adult on 27th; up to four immatures in August and early September; single adults, Aug. 29 and Sept. 25, and single immatures, Sept. 28, Oct. 2 and Nov. 12th. One immature observed over Abbots Leigh, Sept. 18 (TBS).

BLACK-HEADED GULL

NA Usual large flocks on Clifton Down, Bristol, with 1,500 in November and up to 900 in December (PJC). One killed by car, Clifton, had been ringed as nestling at Hilversum (N. Holland) in June 1970.

SA Roost counts, Avonmouth: maximum of 5,500, January and February, 3,500 in early March, 800 by 20th and under 100 by mid-April (TBS).

COMMON GULL

NA Small numbers noted in most months at Severn Beach (43 on March 26, otherwise max. of 17) and at Sea Mills, R. Avon (max., ten on March 30 and on April 7). Flocks of 50-150 in autumn and winter noted in Thornbury, Wickwar and Yate areas.

SA CVL roost: some 12,000 on Feb. 23; 10,000-12,000 in second half of November and some 15,000 in December. Very few used the Avonmouth roost. Up to five noted at CVL on May 18m and one immature bird at Sea Mills on June 3rd. First post-breeding records: Hartcliffe, Bristol, July 4; St George's Wharf, July 13; Abbots Leigh on 15th and CVL on 21st.

LESSER BLACK-BACKED GULL

NA Twelve adults, with at least one nest, on rooftop, Westgate St, Bath. City of Bristol: nesting increasing, though precise figures are difficult to obtain. In Redcliffe/Temple Meads area, 20 Herring or Lesser Black-back nests were destroyed during roof repairs; 25 nests counted later may not be full total, as 164 adults present; two nests found at Docks, Hotwells; other nests of LBB or Herring Gulls found at Canon's Marsh (20), Princess Wharf (3) and St Philips Marsh (9, with 35 LBB Gulls present). Thus city total could well exceed 50 nests, cf. estimates of 10 in 1975 and 23 in 1976.

SA On Steep Holm, about 240 pairs nested - a marked decrease since 1976 (AJP). CVL: some 30 adults on Denny I., April 29 - breeding probably, though no nests found (KEV); 500 at roost in November, and *c.* 750 in December; 14 showing characteristics of Scandinavian race noted on March 14 (RN). The Avonmouth roost held a maximum of 110 in January and February; fewer than 100, March to June; 110 in July, 120 in October and 85 in December.

HERRING GULL

NA A pair probably nested at last year's site, Westgate St, Bath. City of Bristol: nesting on roofs increases though totals difficult to assess; in Redcliffe/Temple Meads area, 325 adults were present in June and 54 nests were located; three broods reared from nests on chimney stacks and factory roof, Cumberland Basin; for further possible sites see preceding species; 15 Herring Gulls were at the St Philips site in April. City total could exceed 160 nests.

SA Steep Holm (AJP): some 4,500 pairs nested, a considerable drop from 1976 (as with LBB Gull), attributed to human disturbance along the new circumferential path and to deaths during 1976 drought; some movement to Flat Holm seems to have occurred. Avonmouth: usually no more than 500 at roost, but 1,000 counted on June 18 and 750 on Oct. 11th. CVL: estimates of 1,000 at roost, Nov. 16 and 2,000 on 25th.

GLAUCOUS GULL

SA A first-year bird was observed at CVL on December 11 (DE, HVJ).

ICELAND GULL

NA One at Severn Beach, November 5 (RGT).

GREAT BLACK-BACKED GULL

NA Very small numbers noted along coast in most months, with a maximum of five at Oldbury-on-Severn in April.

SA On Steep Holm, 20 pairs bred cf. 30 in 1976 (AJP) - continuing the decline of recent years. Roosts: usually fewer than ten at CVL and at Avonmouth, though 17 at latter in July and August and 40 in October. Five, Sand Bay, Jan. 16 and two, April 24; two at Blagdon Reservoir on May 7 and on Nov. 29th.

KITTIWAKE

NA Fifteen at Chittening, May 7 (PJC) and an immature on July 31 (NTL); some 40 at Aust on June 6 (RGT).

SA Coastal records in Avon waters:

	Mar.	April						June						July	Sept.	Nov.
Off	?	23	24	16	21	22	25	5	7	12	14	16	22	10	24	15
Sand Pt.					1	65							1	1		1
B. Down	1	100	3	2		42	60	38		15	1	1	1		1	
S. Holm			1						2						1	

Two adults noted at CVL, Feb. 16 (AM) and up to three, Nov. 13-23rd.

SANDWICH TERN

NA Eleven on shingle at Chittening, Sept. 27 (RGT).

SA Single birds passed Brean Down April 20, 23 and 26 (BR); two between Steep Holm and Weston-s-Mare, May 3 (AJP). At CVL: two July 3 (DAA, DC); three, Sept. 26 and one on 30th (KEV); two, Oct. 5 (RP) and four on the 9th (DC).

ROSEATE TERN

SA One off Brean Down, April 23 (N&LT), on Avon boundary.

COMMON/ARCTIC TERN

NA Severn Beach - Aust area: five, May 25; 25 and 5 on 27th and one, 28th; one (apparently a Common), Aug. 6 and one, Sept. 10th.

SA Small spring passage, coast and reservoirs, April 20 to third week June; largest counts, passing Brean Down, were of 34, 30 and 30 on May 16, 22nd and 25th; at CVL, up to six, April 23 - May 15, then 35 on 26th and 25 next day, and up to three in June with ten on 18th. Autumn passage from late June mainly noted at reservoirs. CVL: up to six, July and August, with 20, Aug. 24/25; up to ten in September, with 16 on 24th and 26th and 28 on 25th; one throughout October with five on 5th. Blagdon Reservoir: eight, Aug. 9, then occasional single birds; 13, October 1st. Three, Sand Bay, Aug. 17 and one at Axe Estuary, Oct. 14th.

LITTLE TERN

NA Severn Beach area: one, April 27 (RGT) and one, Aug. 25 (NTL).

SA One St George's Wharf, April 24 (WGB). At CVL, one on May 15 (AM, RS); one, Aug. 7 (JR); two, Sept. 14 (KEV); one, Oct. 23 (WGB).

BLACK TERN

NA Noted only near Severn Beach: seven, May 15 and eight on 26th; six, Aug. 17; 18 on 24th. two, 20th and 27th, and one on Sept. 4th.

SA More spring records than recently, all from CVL: three, April 27; single birds, May 1-15 then up to four to June 22, with up to 13 on May 26/27. Autumn passage from July 22 (two, CVL), to Nov. 13 (three, CVL) - latest known Avon date. At CVL, counts over nine were: 20, Aug. 18; 23, Aug. 25; 16, Sept. 24-28; ten, Sept. 29 and 11 on Oct. 1. Blagdon Reservoir: 17, Aug. 26. Coast: two, Sand Bay, Aug. 18; one, Portbury, Aug. 21; one, Clevedon, Oct. 18.

WHITE-WINGED BLACK TERN

SA Immature, CVL, Sept. 25-28 (AHD, AM, KEV). /BBRC/

GUILLEMOT

SA One (not oiled) off Steep Holm, June 5 (AJP).

STOCK DOVE

Breeding-season reports from 13 localities, all in SA. Flocks of 300 at Chittening in January and 400 at Tormarton in November (NA); and of 35 at Blagdon Reservoir in December (SA).

COLLARED DOVE

Common in most areas. Largest counts: 100, Durdham Down, Bristol, Jan 23 (HRHL) and 90, Avonmouth Docks, May 10 (RLB).

TURTLE DOVE

Reported, May 8-Sept. 24 from 25 localities (four in NA).

CUCKOO

Reports, April 15-August 20, from 42 places (13 in NA).

BARN OWL

NA The only records received were of one near Chittening, April 14; one near Hawkesbury, Aug. 8 and one near Hallen on 14th.

SA Records from 12 places, mainly CVL, Wrington, Marksbury and Nailsea, of which five were in breeding season. Nest and eggs found at one site, May 13th.

LITTLE OWL

Reports from 50 places (12 in NA). Breeding proved at Chew Stoke, Stanton Prior, Compton Dando and Tickenham Moor.

TAWNY OWL

Records from only 26 places (7 in NA) cf. 63 in 1976 - surely the species is under-recorded. One record of proved breeding - nest with three eggs at Hunstrete.

SHORT-EARED OWL

Single birds noted on coast, Aust to Avonmouth (NA), February, June and October; and at Royal Portbury Dock (SA) in December.

NIGHTJAR

NA One at Cloud Wood near Marshfield, June 3 (MW).

SA A juvenile ringed on Steep Holm, Aug. 26 (AJP) is the first record for the island.

SWIFT

Earliest record was at CVL on April 24; numbers there reached some 5,000 before dispersal in mid-May. A very late migrant was with House Martins at Combe Dingle, Bristol onOct. 20 (NTL).

KINGFISHER

Reported throughout year from widespread NA and SA localities. One dead, apparently struck by car, Newfoundland Rd., Bristol, Dec. 29 (KE, FR). One found hanging by fishing line from branch, Chew Magna on June 14 was released apparently unharmed (DL).

HOOPOE

NA One, Westbury-on-Trym, Bristol, May 23 (RH).

SA A pair bred; three young hatched, of which two fledged. Locality withheld at request of property owner. Single birds reported from Blagdon Reservoir, May 1; Keynsham, June 27; Winscombe, July 12; Easton-in-Gordano and Clevedon, Nov. 6; and Yatton, where one and possibly two birds summered (note: this was not the breeding area).

GREEN WOODPECKER

Common resident, though much under-reported from NA.

GREAT SPOTTED WOODPECKER

Reported throughout the year from 75 widespread localities (23 in NA). Breeding proved at Leigh Woods, Newton Park, Stanton Prior, High Littleton, Chew Magna and Blagdon.

LESSER SPOTTED WOODPECKER

NA Noted at Cromhall, Inglestone Common, Littleton-on-Severn, Pilning, Pucklechurch and in Bristol at Snuff Mills, Stoke Park, Hanham, Blaise Woods and Stoke Bishop.

SA Single birds reported from 23 localities.

WOODLARK

SA One on migration, Sand Point, Oct. 29 (KJH *et al.*).

SHORE LARK

NA One, Severn Beach, Dec. 5-11 (NTL, RGT).

SAND MARTIN

Breeding reports from Keynsham (SA), where 25 nests, more than twice 1975 figure (MJW); and in Bristol from Parson Street Railway Station (SA) and from Frome Bridge Road (NA).

RED-RUMPED SWALLOW

NA One near Severn Beach, Sept. 16 (PE, GY). [BBRC]

TREE PIPIT

Reports of up to seven birds, March 26-Oct. 16, from 16 localities (five in NA), including breeding-season reports from Brockley Combe, Wrington Warren, Burrington Combe and CVL (all in SA). Passage of 73, Steep Holm, Aug. 22 (AJP).

ROCK PIPIT and WATER PIPIT

Recorded on coast and on R. Avon (Sea Mills), Jan.-March and July 17-December (mostly in latter period). One in breeding season, Sand Point. One or two pairs bred on Steep Holm (where up to eight pairs bred formerly). One at CVL, Oct. 3-5 (KEV). Water Pipits (up to four) reported from Barrow Gurney, Blagdon and Chew Valley reservoirs, Jan. 1-April 5 and Oct. 26 to end of year.

YELLOW WAGTAIL

Reports (27) of up to 19 birds, April 17-Oct. 16, in NA from Littleton-on-Severn, Chittening Warth, Avonmouth, Sea Mills; and in SA from Shockerwick, Portishead, St George's Wharf, Ashton Vale and Brislington (Bristol), Keynsham, Walton-in-Gordano, Nailsea and Kenn Moors, Clevedon, Yeo Estuary, Steep Holm, CVL and Blagdon Reservoir.

PIED/WHITE WAGTAIL

Common resident. Roosts of 500, Cumberland Basin, Bristol (SA) in Feb. and of 300 at Oldbury-on-Severn Power Station (NA) in October. White Wagtails: up to three at Severn Beach (NA) and at Compton Dando, April 27-May 28; up to 45 at CVL, April 23/24.

DIPPER

One seen at R. Boyd, Wick (NA) on June 19 (TGE, JDRV). Bred at Midford and in Winford - Chew Magna area (RMC, DL).

NIGHTINGALE

Breeding-season reports of up to three, in NA from Littleton-on-Severn, Thornbury, Inglestone Common, Winterbourne Down and Kelston; and in SA from Leigh Woods, Worlebury, Weston-s-Mare, Burrington Combe, CVL, Midford, Limpley Stoke and Friary Wood.

BLACK REDSTART

Single birds, Dec. 5-26, in NA at Severn Beach (JA, SH, NTL, RGT) and Clifton, Bristol (ATP) and in SA at Clevedon (HER, KEV *et al.*).

REDSTART

One breeding record - Leigh Woods (SA). Reports of up to six birds on passage, April 16-May 14 and Aug. 15-Nov. 6, from sixteen coastal and inland localities including Westbury-on-Trym, Sneyd Park and Durdham Down, Bristol, and Steep Holm.

WHINCHAT

Reports, April 27-June 3 and July 8-Oct. 22, from Cromhall, Severn Beach, Chittening Warth, Hoar Gout, Easter Compton, Filton and Lansdown in NA; and from Whitchurch and Stockwood (Bristol), Ashton Park, Portbury Wharf, Nailsea Moor, Clevedon, Wick St Lawrence, Kewstoke, Bleadon, Axe Estuary, Burrington Combe, CVL and Steep Holm in SA.

STONECHAT

Numerous reports, covering all months, of up to eight birds at 28 coastal and inland localities (eight in NA), including breeding-season records from Chittening and Lansdown in NA and Hengrove Park and Whitchurch old airport (Bristol) and Sand Bay.

WHEATEAR

Reports of up to 25 birds on passage, March 6-June 5 and July 31-Oct. 20, from 31 coastal and scattered inland places.

RING OUZEL

A scarce passage migrant. A male visited a garden at Worlebury on Sept. 27 (TB).

GRASSHOPPER WARBLER

Singing males noted, April 25-July 25, in NA at Sheperdine, Inglestone Common, Tockington, Chittening, Hoar Gout and Filton; and in SA at Stockwood (Bristol), Sand Bay and Compton Dando, with single birds on Steep Holm on Aug. 23 and Sept. 23 (AJP).

AQUATIC WARBLER

SA A juvenile was trapped and ringed, CVL, Aug. 3 (CVRS). [BBRC]

WHITETHROAT

Recovery continues: noted in 24 one-km squares in Bristol cf. 14 in 1976 and nine in 1975 (RLB); 80 other widespread reports.

WOOD WARBLER

Singing males reported, April 30-July 7, from Snuff Mills (Bristol) and Hanham Woods in NA; and from Rainbow Wood (Bath), Leigh Woods, Ashton Park, Wraxall, Brockley Combe, Rowberrow Warren and Weston Woods in SA.

GOLDCREST

Marked decrease; reports fewer than in recent years, and in Bristol noted in 17 one-km squares cf. 25 in 1976 and 42 in 1975.

FIRECREST

Scarce vagrant. A male, Steep Holm, Sept. 26 (AJP).

PIED FLYCATCHER

Single birds on passage reported. April 16 to May 16 and Aug. 21-25 at Hallen (NA) and at Knowle and Bedminster Down (Bristol), Leigh Woods, Flax Bourton, Cadbury Camp, Clevedon, Weston-s-Mare, Kewstoke, CVL and Steep Holm (SA).

BEARDED TIT

SA Up to six, CVL, Jan. 8-Feb. 26 and Oct. 15-Dec. 17th.

WILLOW TIT

NA Two, Inglestone Common, Aug. 3 (RA): one at Vassalls Park, Fishponds, Bristol on Oct. 30 (BLK).

CARRION CROW

A common resident. On Steep Holm a pair reared three young from a nest in an elder bush, only 30 cm from the ground. At least two of the Hooded race (scarce vagrant in the county) were present in Bristol: one was frequently seen on Durdham Down, Jan. 23 to April 17, and at Sea Mills one was noted on March 11 and April 21, two during May and one to Sept. 5 (HRHL, TBS *et al.*).

RAVEN

NA Single birds were noted at Northwick Warth on Jan. 16, at Cromhall from Feb. 5 to May 26 and on Sept. 25, and at Littleton-on-Severn on Sept. 18th.

SA Pairs noted in the Weston-s-Mare area on March 5 and Sept. 26; one on Steep Holm, May 28th.

BRAMBLING

Reported in much smaller numbers than for past five years. Up to 20 noted, January, February and Oct. 11 to Dec. 31 on coast and at Purdown (Bristol), Abbots Leigh, Lansdown and Marksbury.

GREENFINCH

Common resident. One ringed at Druinbergen, Belgium on May 27, 1975 was controlled at Abbots Leigh, March 23, 1977 (TBS).

SISKIN

Widespread reports (58) of up to 40 birds, January to May 29 and September 3 to end of year.

TWITE

SA Up to 35, Jan. 3-March 20 and Nov. 16-Dec. 20, at St George's Wharf, Portishead, Clevedon, Yeo Estuary and Weston-s-Mare.

REDPOLL

Breeding-season reports (all in SA) from Wrington Warren (bred - RA), Brockley Combe, Rowberrow Warren and Weston Woods. Also reports of up to ten birds from nineteen localities (three in NA), Feb. 14-April 14 and July 4 to year-end.

CROSSBILL

SA At least one calling, Wrington Warren, July 31 (PJC).

HAWFINCH

NA Two, Blaise Castle Woods, Bristol, Feb. 17th.

SA Reports of up to six birds from Leigh Woods (breeding proved), Abbots Leigh, Ashton Park, and Tuckingmill and Rainbow Wood (Bath).

SNOW BUNTING

SA Up to three, Oct. 6-Nov. 17 at Clevedon, Sand Bay and CVL.

CIRL BUNTING

SA Pair, Clevedon, Feb. 8; singing male, Barrow Gurney, Mar. 16.

CORN BUNTING

Resident, restricted distribution. A male, May 18, at CVL, where very seldom recorded. Reports (13) of up to four, June 3 to Aug. 3, from Dunkirk, Tormarton, Marshfield, Cold Ashton and Lansdown in NA; and from Burnett and Stantonbury Hill in SA.

OTHER COMMON OR REGULARLY-OCCURRING SPECIES PRESENT

Those marked * are referred to in the Foreward.

Residents: Pheasant, Skylark, Meadow Pipit, Grey Wagtail, Wren, Dunnock, Robin, Blackbird, Song and Mistle Thrushes, Long-tailed, Marsh, Coal, Blue and Great Tits, Nuthatch, Treecreeper, Jay, Magpie, Jackdaw, Rook, Starling, House and Tree Sparrows, Chaffinch, Goldfinch, Linnet, Bullfinch, Yellowhammer, Reed Bunting.

Summer and Winter Visitors: Swallow,* House Martin,* Fieldfare,* Redwing,* Sedge, Reed and Garden Warblers, Blackcap,* Chiffchaff, Willow Warbler, Spotted Flycatcher.

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Avon Mammal Report, 1977

by

A.F. Jayne

The second annual Avon mammal report reflects the continued support of the Society membership, a total of 894 records being submitted by 75 members and friends. It is urged that members continue to send in all possible observations of mammals or mammal evidence, as we produce yearly, in addition to overall, distribution maps for each species. No record is too commonplace or trivial to be of value.

Thanks are due to the following contributors of records and information:
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The twelve names prefixed with an * were of people contributing more than 10 records.

The total of 29 species recorded in the area was the lowest annual number since 1973. The highest total for individual species was again the fox with 147 records.

The otter has now been added to Schedule 1 of the Conservation of Wild Creatures and Wild Plants Act 1975, in England and Wales only. Surveys are currently taking place to determine its status over the whole of

Britain and other research work is in progress to add more to our very limited knowledge of the life style of this animal. It is especially pleasing to the Mammal Section of the Society that our former President, Miss Elizabeth Lenton, has been appointed by the Nature Conservancy Council to carry out the survey for the whole of England, a just recognition of her excellent work on the otter locally.

Check list names and numbers are taken from Corbett 1969 with the exception of numbers 65 and 66, for which the names "Ship rat" (*Rattus rattus*) and "Common rat" (*Rattus norvegicus*) have been substituted respectively.

1. Hedgehog. A well recorded species due mainly to its vulnerability to road traffic, a total of 106 road casualties representing 93% of the records. Reports of casualties were received for each month of the year with a peak of 21 occurring in August, reducing to 15 in September. The numbers remained constant, at 12, from April to July inclusive. 9 dead animals were reported seen on a mile of road through the village of Stoke Gifford, where another animal was probably prevented from being the tenth by a small boy who was noticed shepherding it with a dust-bin lid from the carriageway into a nearby garden. Another 11 casualties were reported in about one and a half miles of the A432 beyond Downend. A very small animal (estimated to be 5 to 6 weeks old) was seen foraging along a rural roadside gutter near Leyhill on 19th November (AFJ). A happier event was the rescue of a female with seven small young from underneath a pile of building materials in the grounds of Hortham Hospital (RW).

2. Mole. The records received were much wider spread than in 1976 covering 78 one km squares as against 56. All except two ere of molehill sightings, the exceptions being dead animals. One was in a field (E&LS) and one by the roadside (JH). One member (RB) supplied 29 one km square recordings. Several sites in the Winterbourne/ Hambrook area, known to have been well colonised for many years were not colonised in the winter following the 1976 drought and still have no evidence of molehills (AFJ).

3. Common Shrew. Evidence for 7 of the 11 recorded locations was of remains found in bottles - a total of 25 skulls being retrieved from 9 different bottles, with a maximum of 4 found on 3 occasions (AFJ). A live animal was seen in a drawing office of a local industrial giant (VGD). It was not thought to have been a supersonic model.

4. Pygmy Shrew. 2 skulls were recovered from discarded bottles and 2 were trapped in a garage in Nailsea (HRH). The only other report was of an animal which leapt from a dormouse nest box which was being inspected in a Somerset Trust Reserve (AFJ).

5. WATER SHREW. This species was not recorded in the area, the first blank since 1967.

6. BATS. Unidentified bats on the wing were reported from 10 different places. It is unfortunate that flight records cannot be used for positive identification, although size of bat and flight characteristics can give some idea of the species, 18 of which are listed in Corbett (1975). Records of unidentified bats are, nevertheless useful for establishing localities. Three species were positively identified.

8. GREATER HORSESHOE. 38 were found hibernating in a cave roost on 6th January (MB). Two and sometimes three were seen on various occasions in a small tunnel from 3rd April onwards. This has been a known summer roost for small numbers for several years. One of these was bearing a ring on its arm, numbered RR3844 (AFJ).

9. LESSER HORSESHOE. One was seen in the same roost as the 38 Greater Horseshoes (MB).

21. COMMON LONG EARED BAT. A live specimen was found in a natural cave (MB). Another individual flew in front of a car at 13.00 hours on 7th May and landed on a low stone wall. It was approached and was being examined when it flew off (EJL).

24. FOX. Observations of this species were received from sixteen 10 km squares. Many of these were of urban foxes, although only two of the urban records were South of the River Avon. A widespread coverage was given in the local press during January of skinned animals being found dumped in various West-country areas, some in Avon county. These bodies, at first believed to be whippets, were later identified as foxes, thought to have been killed for their pelts, "which fetch up to £16 each". A fox, obviously in pain, was observed crawling into a car park at Eastville, where it laid down and died. Inspection revealed it to have a length of wire cutting into it just in front of the rear legs (ADR). At least seven different foxes were seen during the Section's early morning walk near Upton Cheyney (EJL). The one-eared vixen, seen with cubs in this area last year, was seen on one occasion when she was watched being violently sick (AFJ). It is not known whether she had cubs this year. A very young cub, of not more than 5 weeks old, was found in a Tytherington chicken run (PHG). It was not possible to see how it had got in. Following a disturbance in a Winterbourne Down garden at about midnight on 4th August a well grown cub was seen nose to nose with a cat (MJ). The fox was making a "swearing" noise and eventually broke away. The cat did not appear to be at all perturbed, its tail not even being fluffed up. A fox was heard calling in the same area followed by a domestic dog barking. Several minutes later a labrador dog was seen trotting down the road followed by a fox moving at the same speed but some 20 yards behind (AFJ).

Two foxes were seen driven from different earths, at Nailsea, by terriers and shot (HRH) whilst another in this area was disturbed from 6 feet up in a willow tree (HRH). Four (fox) cubs were watched, on several occasions playing outside an earth which was under a Scout Hut in Stapleton(HGH). Three other families of cubs were reported, all from rural areas, (JCR, DEL, AFJ). A pair were seen mating in a field alongside the M5 motorway near Cribbs Causeway at 8.20 a.m. on 2nd February (DAG). The two Section "fox rallies" produced 6 single sightings on 6th February and 4 on 10th July (RAB).

27. STOAT. 3 stoats were recorded from the Somerset side of the Avon County boundary (EJL) one of which crossed the road in front of the observer's car. A weasel, seen some 10 metres further on, was running along the edge of the road towards the car. Only 2 observations were from within the county. A young animal was found on the roadside at Cromhall - it was very tame and easily handled (JH). Two were watched for several minutes playing in a newly mown hay field at Failand (GW).

28. WEASEL. The 25 records were spread over twenty-four 1 km squares from 11 different 10 km squares, 6 being additional to those recorded in 1976. All the observations may be termed "casual", no straight forward method having yet been developed, by the Section, for establishing their presence in a locality. 13 records were of animals crossing roads including one seen on 2 consecutive days at Tytherinton (RW). Another ran into the first lane of a motorway, passed underneath a car and returned across the same lane to the grass verge (FHR). 3 dead animals were found on roads. Another was found dying in a garage, believed to have been a victim of the family cat (JH). 2 were reported from Filton Aerodrome (RAB), one crossing the North-South runway, the other near the Concorde hangar. A weasel foraging in scrubland on Brean Down was moving among some 30 grazing rabbits, which appeared unconcerned at its presence (DEL). A lair was found at the base of a railway embankment at Filton (AFJ). The ends of some crow feathers were noticed poking through a hole in a large metal box which was lying in rough grass. The box was raised revealing more feathers underneath and a considerable amount of small mammal fur. There were numerous distinctive weasel droppings present, some of which had become powdery with age, but others which were fresh.

30. AMERICAN MINK. A lair was found under a bridge in North Somerset (EJL). containing a grassy nest and a pile of scats. There was a lair under the other side of the same bridge in May 1973 when both adult and young mink were seen. Live mink were seen at a weir on the Midford Brook (E&LS) and at Nailsea Wall (HRH). Tracks and scats were reported from 3 other places (EJL).

31. BADGER. The presence of badgers was noted in twenty-one different 10 km squares. Half of the records received were of field evidence, in particular the distinctive footprints, setts and dung pits. 19 bodies were reported, 17 from roads, 1 killed by a dog (JCR) and 1 buried under turf on an open hillside (RAB). Of the live animals seen 5 were crossing roads at night and two ere in suburban gardens, one in Bristol, one in Bath. Accounts of watches from 10 different setts were received with cubs seen at 5 (SJH, EJL, PK, AFJ). Fighting was observed at one sett (PK).

32. OTTER. (FROM MISS E.J. LENTON). The otter has been recorded in 23 one km squares in 1977. Sixteen of these represent a resident population but the other 7 are on two river systems where otters are not now usually present. It is interesting that on one of these systems spraint was found between 6th March and 6th April, the only definite otter evidence there since 1972. Subsequent visits have shown this to indicate a transient animal.

42. RED DEER. Eight hinds were seen in woodland at Cat Grove, Nr Hill (RAB). These would almost certainly be escapes from nearby Whitcliff Deer Park, on the Berkeley estate.

44. FALLOW DEER, A young buck with single pointed antlers was seen on several occasions during December, grazing with cattle near Cromhall (JH).

45. ROE DEER. Three reports were received, one of a fawn lying in cover, the other two of slots. All were in woodland settings within a few miles of Bath.

53. BROWN HARE. Reported from fourteen 10 km squares. Most sightings were of single animals although 3 were seen together at Conkwell (E&LS) on 25th February and a group of 7 adults were together at Pilning on 18th April (JCR). Several road casualties included one near the Castle entrance in High Street, Berkeley (AFJ). One was found asleep on a farm, behind a clump of grass near Cheddar (DEL).

55. RABBIT. The most widely recorded animal in Avon County during 1977, with 106 different 1 km squares. Distribution and numbers in general appear to be at least comparable with those of pre-myxomatosis days in the early 1950's. Population fluctuations are however noticeable, due probably to various control measures employed. Myxomatosis was reported from one area, Velvet Bottom (RAB) but, as has been noticeable in other recent local outbreaks, the mortality rate has not been so drastic as in the original outbreak.

Well over 200 were seen in a field at Northworthy (JCR) on 1st September. About one in ten were very young ones. The first report of juveniles was for 26th April (AFJ). A group of 30 were watched feeding on scrub land on Brean Down in bright sunshine (DEL). They were apparently oblivious of a foraging weasel, 2 kestrels overhead and several human beings in the vicinity. A magpie was feeding from a roadside casualty at Alveston (RW).

57. GREY SQUIRREL. Another widely distributed animal, known to be present in 17 different 10 km squares. Live animals were observed in all months of the year. 12 of the 14 road casualties occurred between mid-August to mid-October. This is consistent with more widespread sightings at this time of year, thought to be due to squirrels being on the move in search of the plentiful food supplies and to the young animals being driven from the home ranges and seeking new territories.

Dreys were reported from 16 areas, 12 in woodland and 4 in hedgerow trees. A number were watched for about an hour, at least eight being visible on some occasions, at 10.00 a.m. on 3rd January at Winterboume Down (AFJ). They were very active, alternating feeding on the ground and chasing up and down the oak trees at the edge of the wood. It was a bright, sunny day but with a very hard frost. Some of them were noticeably grey with white underparts, the normal russet colouring on the back and head being absent. One of two adults in a Lombardy Poplar was seen to break off a twig and carry it away, presumably for drey building (EJL). Several observations were of squirrels feeding including one on the ground from sycamore seeds (DEL), and several in a suburban garden feeding on hawthorn berries (LS). These latter were chased off eventually by several magpies. An animal surprised on a garden gate-post ran up onto the roof of a house where it remained for several hours until able to slip away unnoticed.

59. DORMOUSE. 5 reports of dormouse evidence were received, 4 of them from previously known sites on both Gloucestershire and Somerset Trust for Nature Conservation reserves. The fifth report (EJL) was of the finding of a single gnawed hazel nut shell, which initiated a thorough search of the area. Five nests were discovered, all in brambles and roughly one metre from the ground. Three of the nests were open at one end and another was open at both ends. They were all made predominately of grass with some leaves added. The site is a field which is reverting to scrub.

Examination on 3rd September of the dormouse nest boxes made and sited in a Somerset Trust reserve by the Section produced several nests but no dormice (AFJ/RS). A nearby bird nesting box was found to contain 4 young dormice with their eyes barely opened; estimated at 2 weeks old. 3 of them quickly snuggled down into the nest material until hidden. The fourth left the box and ran down the tree trunk to the ground. It was picked up and returned to the box. Some difficulty was experienced in loosening its grip on the rescuer's fingers for fear of damaging such a small creature. 2 of the bat roosting boxes sited in this reserve also contained what appeared to be dormouse nests. On further investigation an adult dormouse came out of one of the nests. These boxes were fixed at about 20 feet above the ground on the trunks of large, mature trees. Many typically opened hazel nut shells were found in this wood including two lots of paired nuts - each shell having the distinctively rounded hole in it. The hole is thought to be produced by the animal rotating the nut whilst gnawing it. It would seem that a pair of joined nuts would present some difficulties.

61. HARVEST MOUSE. Only one nest was reported during the year (AFJ), this being from a previously known site which was burnt out during the drought of 1976. Searches of other known sites of previous years have so far proved negative, so it must be concluded that 1977 was a locally poor breeding season.

62. WOOD MOUSE. This species (*Apodemis sylvaticus*) is well distributed locally. Some confusion occurs over its other commonly used names such as field mouse or long-tailed field mouse. It can be readily distinguished from the house mouse by the light colouring of its underparts and legs, the house mouse being of uniform colour all over. The wood mouse is more easily confused with the yellow-necked mouse (*Apodemus flavicollis*) which is marginally larger and has a distinctively ochre coloured patch on its chest, in the form of a letter Y between the fore limbs and extending down the abdomen. The yellow-necked mouse is much less common and more specifically a mouse of woodland habitat. They are however known to come into buildings during winter, particularly apple stores. Positive identification of the latter species is more conclusive with the animal in the hand. It is difficult to differentiate readily between the skulls of the two species, thus the occurrence of *Apodemus sylvaticus* recorded from discarded bottles could be erroneous. Some doubts could likewise apply to recordings from gnawed hazel nut shells. A comparison of live-trappings results from local sites known to contain both species indicate a ratio of 10 *Apodemus sylvaticus* to 1 *Apodemus flavicollis*. Of the 19 records received of wood mice 7 were of live-trapped animals (EJL, GW, AFJ, JH, HRH) and 5 were of live animals. They were all positive sightings. The 2 records of skulls from bottles which were in places thought to be unlikely territories for *Apodemus flavicollis*. The remaining 5 records were of gnawed hazel nut shells found in woods, from none of which yellow-necks have been found. In the event of the woods containing them however it would seem unlikely that, from the numbers of nuts found, at least a majority were not from wood mice.

63. YELLOW-NECKED MOUSE. The only positive records of this species were of specimens trapped in both attic and domestic premises at Cromhall (JH).

64. HOUSE MOUSE. The unprecedented number of 5 records were received for 1977 of this, the most under-recorded common species in the area. Most people prefer to have a "field mouse, come in from outside" on their premises. The loose grain from a broken mixed corn sack, in a grain store at Pilning, was found to contain five separate nests. 22 young, ranging from unfurred blind to immature furred animals, were destroyed (JCR). 4 were seen to escape from a dustbin being emptied by refuse collectors in Knowle. One dustman said that there were some there most weeks (JW). A total of 10 were trapped in a Nailsea garage/workshop from June to December (HRH).

65. SHIP RAT (*Rattus rattus*). One young specimen was caught by a cat in a Clifton garden (JM).

66. COMMON RAT (*Rattus norvegicus*). Road casualties accounted for 10 of the 14 records received. These were spread over 7 different 10 km squares.

67. BANK VOLE. The few records recieved of this rodent does not appear to give a true picture of its present status. Evidence obtained was from gnawed hazel nut shells, a skull from a hedgerow bottle and one

live animal caught in a Longworth trap during a Section field meeting at Easton-in-Gordano.

68. WATER VOLE. An adult was watched for about half an hour on 24th April swimming up and down the edges of the River Frome at Winterbourne Down, crossing and recrossing the river several times. It appeared to be trying out all the various hole entrances in the bank (AFJ). Several adults and half grown juveniles were seen on the same stretch of river on 30th April.

69. FIELD VOLE. Easily the best recorded of the three voles, two-thirds of the 30 records being of runs, with distinctively green-coloured fresh droppings and bitten off grass stems in evidence. These runs are readily found in fallow grassy areas on road sides and in field margins. Nests were found in four of the locations by following the runs (EJL, AFJ). These nests, about the size of a cricket ball and of finely shredded grass, are usually in the base of a clump of coarse grass. A further five records were of skulls found in bottles (AFJ).

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Entomological Notes, Bristol District, 1977

Compiled by the recorders of the Entomological Section
G. Best
B.S. Harper
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For over a quarter of a century records of butterflies and moths for the Bristol District have been published annually in the *Proceedings* under the title of Lepidoptera Notes, Bristol District. Occasionally records from other insect groups have been included in the Lepidoptera Notes but until this year most of the records received by the Entomological Section have been for the Lepidoptera reflecting the greater popularity of butterflies and moths over other orders. In 1977 the Section started the Avon Entomological Survey to collect records on a locality and 10 km square basis from Avon, and also began a detailed survey of Leigh Woods as area of special conservation interest. These surveys have resulted in an increase of data from specialists in various insect groups much of which has been sent to the Biological Records Centre , or filed, for use in national and local mapping schemes.

To accommodate some of the more interesting records from additional orders the 1977 report has been slightly enlarged and the title changed from Lepidoptera Notes to Entomological Notes. Previous authors of these notes have defined the area covered but no permanent boundaries of the Bristol District for the purpose of the Lepidoptera Notes have been established (Blathwayt 1950; Burton 1964; Brown 1969), although in recent years the area covered has largely been restricted to the Watsonian vice counties of North Somerset (V.C.6) and West Gloucestershire (V.C.34). With the increase of records from Avon it seemed advisable to base the area covered by this report on that county, and therefore 'Bristol District', for these entomological notes, includes records received from Avon and also localities in the adjacent areas of Somerset and Gloucestershire. Localities in the latter two counties are indicated with S, or G, respectively - all other records refer to Avon.

Records were received from:- R.Angles, G. Best, P.J. Brain, C.S.H. Blathwayt, J.F. Burton, R.S. Cropper, B.S. Harper, M.K. Knight, K.W. Miller, A.R. Nichols, K.H. Poole, R.H. Poulding, R.W. Rowe, J.D.R. Vernon.

Butterflies (Lepidoptera) by B.S. Harper

1977 was a poor year for butterflies, in complete contrast to 1976. A cold spring was followed by a colder than average summer, although there were several spells of warmer weather. Emergence of butterflies in Spring was late, sometimes by as much as three weeks. The summer species were also late in emergence, and this was noticeable for the small numbers of 'browns' that were seen in July. The drought of 1976 caused many species to be low in numbers this year, many of the foodplants being burnt during the hot summer; and fires destroyed habitat, particularly at Sand Point and Priddy.

Certain species were reported after an absence of several years, the Duke of Burgundy Fritillary being seen in Gloucestershire and the Pearl-Bordered Fritillary found at Brockley Combe. A report that the Brown Hairstreak has been found at a new locality in the Bristol area has yet to be confirmed. A record of a Mazarine Blue in Gloucestershire in 1976 was received too late for the records for that year. Records refer to single specimens unless indicated.

Pararge megera L. (Wall Brown). Weston-s-Mare and Sand Point, May 22; Arnos Vale, Bristol, May 24, June 12 and Aug. 21; three, Lansdown, Bath, June 3; three, Uphill, June 4 and eight, Aug. 13; Congresbury, June 4; three, Axbridge, June 8; Charterhouse, S, June 9; Brown's Folly, Nr Bathford, June 16; three, Charfield, Aug. 4; three, Brean Down, S, Sept. 3 and one, Steep Holm, S, same date.

Melanargia galathea L. (Marbled White). Less common than usual. New localities include: Uphill, Aug. 9; 20, Brown's Folly, Nr. Bathford, July 18; ten, Westridge Woods, Wotton-under-Edge, G, July 21; Hawkesbury Upton, Aug. 1; Brent Knoll, S, July 6; Publow, July 25 and several, Clifton Down, Bristol, July 28.

Eumenis semele L. (Grayling). None seen at Sand Point where colony may have been destroyed by fire. Four, Brean Down, S, July 30; Crook Peak, Nr. Loxton, Aug. 7, 14; Nyland Hill, Nr. Draycott, S, Sept. 4 and Uphill, Sept. 7.

Aphantopus hyperantus L. (Ringlet). This species appears to be the worst affected by the drought of 1976. Only one record of more than 20 individuals received.

Argynnis selene Schiff. (Small Pearl-bordered Fritillary). Three, Brockley Combe, June 25; 20, July 2 and four, July 3, same place; Goblin

Combe, Nr. Cleeve, July 3 and four, July 9th; Compton Bishop, July 10; six, Mascalls Wood, Nr. Cheddar, S, June 8, and several Black Down, Mendips, July 24.

Argynnis euphrosyne L. (Pear-bordered Fritillary). Eight, Brockley Combe, May 22 and one, same place, June 1.

Euphydryas aurinia Rott. (Marsh Fritillary). Three, Shapwick, S, June 7; Charterhouse, S, June 30 and Inglestone Common, Hawkesbury, mid-June.

Argynnis aglaia L. (Dark-green Fritillary). Ten, Brean Down, S, July 3 and 12, Aug. 10, Goblin Combe, Nr. Cleeve, July 3 and five, July 9; Cadbury Camp, Nr Tickenham, July 14; two, Congresbury, July 16; ten, Dolebury Warren, Nr. Churchill, July 20; six, Westridge Wood, Nr. Wotton-under-Edge, G, July 21; 18, Brockley Combe, July 28 and 12, Aug. 10; Providence Hill, Long Ashton, July 31; two, Cheddar Gorge, S, Aug. 4 and two, Crook Peak, Nr. Loxton, Aug. 7.

Argynnis paphia L. (Silver-washed Fritillary). Two, Court Hill, Nr. Clevedon, July 14; Congresbury, July 16; several, Goblin Combe, Nr. Cleeve, July 16; 12, Brockley Combe, July 30 and 25, same place, Aug. 9; Leigh Woods, Nr. Bristol, July 24 and two on 31st; 12, Inglestone Common, Hawkesbury, Aug. 3.

Vanessa atalanta L. (Red Admiral). Less common than usual and seen only in small numbers from May 29 to Nov. 2.

Vanessa cardui L. (Painted Lady). One seen in early March, Bath; Arnos Vale, Bristol, April 28; Uphill, June 4 and Dundry, July 7; Uphill, July 31; two Brockley, Aug. 9; seven, Weston-s-Mare, Aug. 28 and singles, same place, Sept. 23, 29; one, Walton Hill, Clevedon, Aug. 28 and Sand Point, Oct. 22.

Polygonia C-album L. (Comma). Widespread but numbers smaller than usual.

Limenitis camilla L. (White Admiral). Twelve, Michael Wood, Nr. Stone, G, July 9 and three on 29th; seven, same locality, Aug. 3 and 15, Inglestone Common, Hawkesbury, same date.

Hamearis lucina L. (Duke of Burgundy Fritillary). Three, Midger Wood, Nr. Hillsley, June 1.

Cupido minimus Fuessl. (Small Blue). Uphill, May 28, and four, June 4, July 4; two, Filton, June 3 and four on 22nd.

Aricia agestis Schiff (Brown Argus). Goblin Combe, Nr. Cleeve, May 28 and three, June 1; eight, Sand Point, May 29, four Aug. 19 and one, Sept. 8; Hanham Woods, May 29; six, Midger Wood, Nr. Hillsley, June 1; 10, Uphill, early June; six, Brockley Combe, June 8; 10, Filton, June 22; 40, Nr. Axbridge, S, June 8, and ten, Mascalls Wood, Nr. Cheddar, same date; three, Brown's Folly, Nr. Bathford, June 16; two, Sand Point, Aug. 31; singles, Twinhills, Wells, S, Sept. 1 and Weston, Sept. 8.

Lysandra coridon Poda. (Chalkhill Blue). Inglestone Common, Hawkesbury, Aug. 3; three, Brean Down, S, Aug. 10; seven, Uphill, Aug. 29 and five, same place, on Sept. 7.

Celastrino argiolus L. (Holly Blue). Recorded from many localities but only in small numbers.

Callophrys rubi L. (Green Hairstreak). Shute Shelve, Nr. Axbridge, May 18; one, Filton, May 19, three, May 23 and one, June 1; six, Brockley Combe, May 22; two, Goblin Combe, Nr. Cleeve, May 28 and a single, June 1; seven, Midger Wood, Nr. Hillsley, June 1; Axbridge, June 8 and Mascalls Wood, Nr Cheddar, S, same date; two, Charterhouse, Mendip, S, June 9.

Thecla quercus L. (Purple Hairstreak). Michael Wood, Nr. Stone, G, July 19, 29; Westridge Woods, Wotton-under-Edge, G, July 21; 15, Brockley Combe, July 30; ten, Durdham Downs, Bristol, July 31; two, Filton, Aug. 1 and 20, Leigh Woods, Nr. Bristol, same date; Brandon Hill, Bristol, Aug. 2; three, Inglestone Common, Hawkesbury, Aug. 3; Weston Woods, Aug. 13 and Wedmore Vale, Bristol, Sept. 6.

Strymonidia woalbum Knoch (White Letter Hairstreak). 2, Michael Wood, Nr. Stone, G, July 29 and one, Aug. 3; ten, Durdham Downs, Bristol, July 31 and a single, Providence Hill, Long Ashton, Aug. 9.

Colias crocea Fourc. (Clouded Yellow). One, Abbots Leigh, June 4.

Erynnis tages L. (Dingy Skipper). One, Filton, May 19, and four, same place, May 24; two, Goblin Combe, Nr. Cleeve, May 30; eight, Midger Wood, Nr. Hillsley, June 1; six, Axbridge, June 8; 25, Charterhouse, Mendip, S, June 9 and 25, Velvet Bottom, Nr. Charterhouse, S, same date; two, Brockley Combe, also same date.

Pyrgus malvae (Grizzled Skipper). Two, Filton, May 19; five, Goblin Combe, Nr. Cleeve, May 28; several, June 1 and one July 23; six, Burrington Combe, May 29 and two, June 7; six, Midger Wood, Nr. Hillsley, June 1; eight, Axbridge, June 8; 40 Charterhouse, Mendip, S, June 9 and 25, Velvet Bottom, Nr. Charterhouse, S, same date; five, Brockley Combe, June 25 and one, July 3.

Moths (Lepidoptera) by K.H. Poole

1977 proved to be a disappointing year for moths - numbers, both of species and totals, being considerably below the average. The only migrant reported was the Silver Y, and possibly the Small Marbled at Weston-s-Mare. All were single specimens unless otherwise shown, and those marked * were noted at light.

Deilephila procellus L. (Small Elephant Hawk). Larva, Walton Hill, Street, S, Aug. 9, (RSC).

Hemaris tityus L. (Narrow Bordered Bee Hawk). Shapwick Heath, S, June 7 (ARN).

Pseudoips fagana L. (Scarce Silver Lines). Several Weston-s-Mare, late July, Aug.*, (CSHB).

Eremobia ochroleuca Schiff. (Dusky Sallow). Weston-s-Mare, July 26* (CSHB).

Chilodes maritimus Tausch. (Silky Wainscot). Berrow, S, July 29* (CSHB).

Archanara dissoluta Treit. (Brown Veined Wainscot). Berrow, S, Aug.* (CSHB).

A. sparganii Esp. (Webb's Wainscot). Berrow, S, Aug. 5* (KHP).

Atethmia centrago Haw. (Centre Barred Sallow), Congresbury, Sept. 9 (RWR).

Eublemma parva Hb. (Small Marbled), Weston-s-Mare, March 2* (CSHB). Only the fourth specimen recorded for the old county of Somerset since the first in 1858.

Catocala nupta L. (Red Underwing). Burnham-on-Sea, S, Aug. 2, Sept. 14, Berrow, S, Aug. 16 (RSC).

Lygephila pastinum Treit. (The Blackneck). Shapwick Heath, S, July 22* (CSHB).

Idaea seriata Schr. (Small Dusty Wave). Congresbury, July 7 (RWR).

Scopula immutata L. (Lesser Cream Wave). Leigh Woods, June 11 (RWR).

Triphosa dutitata L. (The Tissue). Several hybernating in a cave, Sandford, Oct.

Pelurga comitata L. (Dark-Spinach), Berrow, S, Aug. 26 (CSHB).

Epirrhoe galiata Schiff (Galium Carpet). Berrow, S, Aug. 5* (KHP).

Ectropis consonaria Hb. (Square Spot). Weston-s-Mare, April, (CSHB).

Epione repandaria Hufn. (Bordered Beauty). Congresbury, July 28, Sept. 16 (RWR).

Nematopogon swammerdamella L. Up to 20, Leigh Woods, May 23 (RHP).

Adela reaumurella L. In large numbers, Leigh Woods, May 21.

Further additions to the list for Congresbury (RWR) are:-

Cryphia domestica Schiff (Marbled Beauty), *Acronycta rumicis* L. (Knot Grass) *Mamestra brassicae* L. (Cabbage), *Hadena bicruris* Hufn. (Campion), *Xestia c-nigrum* L. (Setaceous Hebrew Character), *Noctua comes* Hb. (Lesser Yellow Underwing), *Amathes xanthographa* Schiff. (Square Spot Rustic), *Polymixis* *flavicincta* (Large Ranunculus), *Oligia fasciuncula* Haw. (Middle Barred Minor), *Hydraecia micacea* Esp (Rosy Rustic), *Photedes pygmina* Haw. (Small Wainscot), *Xanthia icteritia* Hufn. (Sallow), *Xanthia togata* Strom. (Pink Barred Sallow), *Scoliopteryx libatrix* L. (Herald), *Hemithea aestivaria* Hb. (Common Emerald), *Idaea dimidiata* Hufn. (Single Dotted Wave), *Scopula imitaria* Hb. (Small Blood Vein), *Ortholitha chenopodiata* L. (Shaded Broad Bar), *Anaitis plagiata* L. (Treble-Bar), *Eulithis prunata* L. (The Phoenix), *E. pyraliata* Schiff. (Barred Straw), *Chloroclysta truncata* Hufn. (Common Marbled Carpet), *Cosmorhoe ocellata* L. (Purple Bar), *Xanthorhoe ferrugata* Cl. (Dark Barred Twin Spot Carpet), *Hydriomena furcata* Thumb. (July High-flyer), *Xanthorhoe montanata* Schiff. (Silver Ground Carpet), *Lomographa temerata* Schiff. (Clouded Silver), *Cabera exanthemata* Scop. (Common Wave), *Deuteronomos alniaria* L. (Canary Shouldered Thorn), *Selenia dentaria* Fab. (Early Thorn), *Peribatodes rhomboidaria* Schiff. (Willow Beauty), *Pterophora chlorosata* Scop. (Brown Silver-Line), *Hepialus humuli* L. (Ghost Swift).

Dragonflies and Damselflies (Odonata) by A.R. Nichols

Fifteen species were recorded in 1977 - eight dragonflies and seven damselflies. The following records are of single specimens unless otherwise noted.

Aeshna cyanea Muller (Southern Aeshna). Brockley Woods in May and Bristol in Sept.

Aeshna juncea L. (Common Aeshna). Bleadon in Aug. and a pair, Berrow, S, Oct.

Aeshna mixta Latreille. (Scarce Aeshna). Kingston Seymour, Sept.

Anax imperator Leach. (Emperor Dragonfly). Several at Priddy Pools, Mendip, S, July.

Brachytron pratense Muller (Hairy Dragonfly). One caught by cat in garden, Henleaze, Bristol, in Sept.

Orthetrum cancellatum L. (Black-tailed Skimmer). Male, Gordano Valley, Nr. Clevedon, in Aug.

Libellula quadrimaculata L. (Four-spotted Chaser). Nr. Axbridge, June.

Sympetrum striolatum L. (Common Darter). Reported as plentiful, or even abundant, in several places in the south of Avon, Aug. and Sept.

Agrion splendens Harris (Banded Demoiselle). Several at Saltford, June and *c.* 10, Freshford, in Aug.

Lestes sponsa Hansemann (Emerald Damselfly). Several, Priddy Pools, Mendip, Aug.

Pyrrhosoma nymphula Sulzer (Large Red Damselfly) Nr. Axbridge, June and several at Priddy Pools, Mendip, S, July.

Ischnura elegans van der Linden (Bluetailed Damselfly). Oldbury Court, Bristol and Easterton, July, also seen at Berrow, S, and several, Freshford, Aug.

Enallagma cyathigerum L. (Common Blue Damselfly). Tortworth Lake, and Berrow Dunes, S, in June. Several at Freshford in Aug. and Priddy Pools, S, same month.

Coenagrion puella L. (Azure Damselfly). A few at Freshford in Aug.

Crickets and Grasshoppers (Orthoptera) by K.W. Miller

Records were received of 13 species from Avon plus a further three species from Somerset but within V.C.6 (north Somerset). Details of these records have been sent to the Biological Records Centre as part of the National Orthoptera Distribution Maps Scheme (Skelton, 1973). In addition to this it is hoped to produce an accurate map of the Orthoptera of Avon based on 2 km squares along the lines of the excellent survey of the Orthoptera of Sussex (Haes 1972, 1973). For both these schemes many more records of all species including the common ones are required with precise details of localities and if possible grid references.

Platycleis denticulata Pz. (Grey Bush Cricket). Discovered on the southern slope of Brean Down, S, in some numbers on 2 Sept, by RSC. This appears to be a new county record for Somerset although it is found in N. Devon and Glamorgan.

Metrioptera brachyptera L. (Bog Bush Cricket). Abundant on Somerset Trust for Nature Conservation reserve at Westhay Moor, S, July (JFB).

Acheta domestica L. (House Cricket). One, stridulating at dusk from piles of earth near new sewage outfall at seawall, Clevedon, May 20, 21 (JFB). This species is often found nowadays in association with rubbish dumps and all records are required to determine its present status in the county.

Gomphocerippus rufus L. (Rufus Grasshopper). Found at Portishead Down, Sept. (RSC) and abundant on Polden Hills, S, in June 1976 (JFB).

Stethophyma grossum L (Large Marsh Grasshopper). Three nymphs, Mere Heath, S, July (JFB).

Beetles (Coleoptera) by R.W. Rowe

The rather varied weather experienced during 1977 appeared to have had very little overall effect on the Coleoptera as most of the expected species were noted during the year. The following are a selection of the more unusual species recorded including a report on the Coccinellidae (Ladybirds) supplied by K.W. Miller. Records refer to single specimens unless otherwise specified.

Podabrus alpinus Pk. On bramble, Congresbury, July 3, (RWR).

Malachius bipustulatus L. Congresbury, June 18, 26, (RWR).

Lochmaea crataegi Forst. On hawthorn, Congresbury, May 1, (RWR).

Lema cyanella L. On dandelion, Congresbury, April 11, (RWR).

Dromius linearis Ol. Swept from grass, Congresbury, June 4, (RWR).

Strangalia masculata Pod. Wrington Woods, July 16 (RWR) and Leigh Woods, Sept. 10 (RHP).

Lampyris noctiluca L. Landed on hand, Congresbury, June 24, (RWR).

Dorcus parallelipipedus L. On path, Congresbury, August 30, (RWR).

Aphodius obliteratus Pz. Several in flight, Leigh Woods, Sept. 9, (RHP).

Coccinellidae (Ladybirds)

A start was made with recording this interesting group of beetles, record cards being returned to the Biological Records Centre from Congresbury, Portishead and Bristol (West) 10 km squares, ST46, 47 and 57. Out of a total of 43 species in this group 11 were recorded from one or more of the above squares but clearly this could be improved on both as to number of species recorded and of course in the number of squares for which returns are made.

Unfortunately, many of the smaller species are difficult to find or, once found, to identify, while even the more conspicuous species are often confusing because of the numerous colour varieties which occur. If workers on other groups of insects, or indeed any one interested, would care to keep an eye open for ladybirds and let me have any specimens they find, I will do my best to identify them or pass them on for a second opinion if difficulties arise. (KWM).

True Flies (Diptera) by R.H. Poulding

Since L.F.H. Audcent's extensive review of the Diptera of the Bristol District appeared in the *Proceedings of the Bristol Naturalists' Society* in 1948 and 1949, few local records have been published of this large insect order. The present status of even the more easily identifiable species is virtually unknown in Avon, and no doubt major changes in distribution and numbers of many species have occurred since Audcent's list was completed almost thirty years ago. Records received for 1977 were mainly for the commoner species identifiable in the field but also included a number of syrphids or hover flies from collected specimens. All records refer to Avon.

Bibio marci L. (Bibionidae - St Mark's Fly). Abundant Cadbury Hill, Congresbury, May 1 and Leigh Woods, Bristol, May 21 (RWR).

Sargus bipunctatus Scopoli (Stratiomyidae - Soldier Flies). Up to ten on Ash, Henleaze, Bristol, various dates, Sept and early Oct.

Bombylius major L. (Bombyliidae - Bee Flies). Single specimens, Henleaze, Bristol and Portishead, April 3 - unusually scarce this spring due, presumably, to persistent low temperatures.

Sicus ferrugineus L. (Conopidae). Recorded on Hogweed, Leigh Woods, Bristol, July 31.

Leucozona lucorum L. (Syrphidae - Hover Flies). Max. of ten, Leigh Woods, Bristol, June 12.

Rhingia campestris Meigen (Syrphidae). The only record is of single specimen, Hanham, Bristol, May 29. This usually common hoverfly, whose larval stages occur in moist cow dung, appears to have been severely reduced by the 1977 drought.

Volucella pelluscens L. (Syrphidae). Recorded from several woodland areas nr. Bristol and occasionally from gardens. Maxima of ten, Leigh Woods, Bristol, July 2 and *c*, 20, same place, July 24; seven on blossom of Wayfarer Tree (*Viburnum lantana*), Durdham Downs, Bristol, July 4. This large and spectacular syrphid which in the larval form lives in wasp's nests (*Vespula* sp.) was unusually numerous, with records extending from May until

October.

Volucella zonaria Poda (Syrphidae). Previously noted as very rare in the Bristol District by Audcent (1949), *zonaria*, one of the largest syrphids in Britian, has in recent years increased in Avon as in some other southern counties. Three were recorded in 1977: one resting on Caper Spurge (*Euphorbia lathyrus*) in garden, Henleaze, Bristol, Aug. 8 and two on *Buddleia* sp., Durdham Downs, Bristol, Sept. 11.

Criorhina berberina Fabricius (Syrphidae). Female, feeding on blossom of Ground Elder (*Aegopodium podagraria*), Leigh Woods, Bristol, June 6 (RHP). Verrall (1901) considered *C. berberina* to be a rather uncommon British species occurring on early Hawthorn blossom in southern England. Audcent (1949) cites ten records from localities which are now in Avon.

Other Orders

Hymenoptera

The following species were identified amongst specimens received from Avon:

Early Humble Bee (*Bombus pratorum*), Small Garden Humble Bee (*Bombus hortorum*), Small Earth Humble Bee (*Bombus lucorum*), Common Carder Bee (*Bombus agrorum*), Tawny Mining Bee (*Andrena armata*), Common Wasp (*Vespula vulgaris*). (GB).

Hemiptera (Heteroptera)

Records of this sub-order (True Bugs) in Avon were received from RSC and have been filed for reference.

MECOPTERA (Scorpion Flies), *Panorpa communis* L. Three, Leigh Woods, Bristol, June 12 and one, same place, July 24.

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The peatlands of Central Somerset and their utilization

by

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Conflicts of interest are to be expected in areas of rapid land-use change. The Somerset levels are such an area. Both conservationists and planners are seeking a land-use strategy which will allow the co-existence of conservation areas, pastoral agriculture and the peat extraction industry. This paper discusses the general problems inherent in formulating such a strategy with relation to the raised moss deposits of Somerset in the area of Shapwick Heath. The Heath and environs contain all three land-use types that are in conflict. As a prerequisite to understanding this conflict, the background to peat extraction, pastoral agriculture and nature conservation will be considered.

Commercial peat extraction started in the late nineteenth century and increased markedly as horticultural demand rose in the 1900's, 1940's and again in the 1960's. One firm is responsible for over 70% of the area's peat production and owe their success to the favourable climate which allows extraction throughout the year, easy access to markets and the peat's high quality. Practically all of the peat is used for horticulture and is sold as five proprietary brands. The rate of extraction for the raised moss deposit is increasing, being 16,000 tons in 1954, 60,000 tons in 1965, 80,000 tons in 1970 and around 170,000 tons in 1977. Annual production and total reserve estimates are tentative. For future demand, drainage problems, mechanisation potential and peat depth remain unknown.

Agriculture in this area has undergone little post-war change. A Ministry of Agriculture, Fisheries and Food (M.A.F.F.) survey of 215 peatland farms in 1975 showed that 96% of the agricultural land is used for the grazing of cattle, primarily for summer milk production. Land holdings are fragmented with a typical farmer having to travel in excess of fifteen miles in order to visit all his fields. The 4% of land under crops is considered by many to be the start of agricultural expansion, such as has taken place in the Fens. This move to arable crops is encouraged by the European milk surplus, E.E.C. grants for agricultural improvement and increased land drainage. However, a move towards an arable landscape around Shapwick is unlikely, for there is no immediate market and no arable farming expertise. Additionally, the occurrence of a high number of out-of-season frosts would prohibit the production of many profitable but high risk crops. Agricultural development will more likely take the form of higher productivity within the existing dairy farms.

Shapwick Heath was established as a National Nature Reserve in 1961 and received international status in the early 1970's. It is regarded as having great palaeontological, archaeological, ornithological and ecological importance. To date there are in excess of twenty academic papers dealing with the Heath. The area is vividly described by Storer (1972):

> "Some parts of Shapwick Heath resemble a woodland of smallish trees: there are no forest giants. Instead, there are pools scattered over the whole floor of this woodland leaving only a narrow slightly raised path. Some of the pools are open water, others are filled with bright green *sphagnum* moss; everywhere there is a covering of lichens and the sound of insects"

A consultative report on the wetlands (N.C.C. 1977a) stated:

> "A fundamental conflict of need between wildlife conservation, agricultural improvement, and exploitation of a mineral resource (peat extraction) has developed."

One of the conflicts that exist between peat extraction and agriculture can be resolved, albeit on a financial basis; for in 1968 the respective rates for agricultural peat land and peat land planned for extraction were respectively £360 and £1,200 per hectare. Those values have increased tenfold over the past decade, with areas zoned for peat extraction now valued at £15,000 per hectare. Thus there is always the incentive for farmers to sell their land for peat extraction.

Agriculturalists and peat extractors both agree on the need for increased accessibility, a flexible planning policy, and, more importantly, good drainage resulting in a decrease of water levels.

Land-use conflicts involving nature conservation are far more difficult to resolve, for financial arguments no longer apply. The value of an uncommon flora and fauna growing on a stratographic record of recent earth history cannot be priced. Nevertheless, the value of conservation must be assessed in competition with the food we need and the peat we want. Planning of land-use involving individual land-use parcels, is clearly not the answer, for the land-uses interact to such an extent in the area of Shapwick Heath that a drop in the water table caused by peat extraction or agriculture will alter the flora of a considerable area.

The immediate problem is peat extraction on the nature reserve. The case is hindered by appearances, for Shapwick Heath is certainly not a visually appealing area; visitors comment on its dereliction, poor fields, small trees and monotonous landscape. The County Development plan, assuming that nature reserves are attractive, shows the area incorrectly as one of high landscape value. Storer (1972) states tactfully that this area

> "does not look very attractive; peace, quiet and a sense of space and "oldness" are feelings it engenders".

The position of the Planning Authorities has changed over time from initial interest, and support for conservation, to one of apparent helplessness. The original development plan for 1949/52 gives details of unconditional planning permission for peat extraction on Shapwick Heath followed by a statement of support for this area of scientific interest. When the rate and effect of extraction was realised, Somerset County Council in their report "Peat in Somerset" (S.C.C. 1968) stated:

> "Nature conservation interests are affected to a substantial degree by planning permission already granted in the main before such interests were notified. This position has to be accepted and the Nature Conservancy and other interested bodies left to negotiate desirable safeguards with the peat extractors."

Today the answer is a moral one relying on goodwill. For the peat extractors, the ecological value at Shapwick Heath was never in doubt, but they are unwilling to risk commercial viability under conservational pressure. Direct criticism by the Nature Conservancy Council (N.C.C. 1977a) leads to the following firm but fair retort:

> "This depicts a completely unjustifiable attitude towards one of the area's main providers of employment, and an industry which supplies a material vital to Britain's Horticultural Industry."

Their attitude towards nature conservation is cautious but always hopeful. In 1978 (N.C.C. 1978) they stated that they hoped to re-organise their peat extraction programme on Shapwick Heath in such a way that this area can be released permanently to the Nature Conservancy Council.

The effect of agriculture on nature conservation is a little more subtle. To obtain increased productivity the water table must be lowered and the movement through the arterial drainage system increased. This will have five major effects. First, it will isolate bog and fen vegetation to very restricted areas. Secondly, it will involve an increased programme of ditch (rhine) clearance which will reduce the vegetation on the banks, together with the birds and insects within that vegetation. Thirdly, the number of invertebrates brought to the surface in winter will be reduced, decreasing the area's ornithological interest. Fourthly, the use of reseeded pastures will reduce the diversity of species. Finally, the movement of alkali-, pesticide- and herbicide-rich waters into areas of ecological interest will alter the floristic composition of the area.

Farmers improving their land could expect it to cost £500 per hectare, after an E.E.C. grant. This would increase their annual returns by £75 per hectare for pasture land. The Agricultural Advisory Council consider that two thirds of the total area is capable of high agricultural productivity and detailed proposals are made in "Modern Farming and the Soil", (M.A.F.F. 1970). To date, one of the major costs to the farmer is the lowering of the water table. This cost will be reduced, for within the next few years the Wessex Water Authority will be able to lower the water table of the whole area quite considerably. This is in line with both E.E.C. directives and Government policy outlined in the white paper "Food from our own resources", (1975).

M.A.F.F. are under strong pressure from the farming community to provide E.E.C. subsidised grants for agricultural improvement. Their main commitment to conservation is at present the loosely-worded section II of the Countryside Act, by which

> "every minister, government department and public body .... shall have regard to the desirability of conserving the beauty and amenity of the countryside."

(N.C.C. 1976), clarification of aims in disputed areas are really in the hands of the grant-awarding E.E.C. The Community, in their efforts to increase the European "quality of life", have recently advised the withholding of grant aid where wildlife would be endangered.

Debate on the future of the Somerset levels has moved to a national level following the Nature Conservancy reports (N.C.C. 1977a, N.C.C. 1978), a B.B.C. documentary, features in all the major newspapers, and an E.E.C. meeting on the wetlands. Two conclusions have been reached: first, the need to allot blame is recognised - much is placed on central Government; second, the need for change piloted by the formulation of a land-use plan.

The current land-use planned for Shapwick Heath is predominantly - water. This was first proposed in 1969 as part of a water reserve and flood-prevention scheme. Firm commitment from both the Water Authority and the County Council on the creation of nine lakes covering 85 hectares came in 1978. The use of these lakes is still under debate, although the development of a marina is firmly supported by the Sports Council with sailing and water-skiing forming the main activities. Two alternative uses are for fishing and for a wildlife reserve. The current plans for the lakes try to combine all three activities. When the peat is removed the remainder of Shapwick Heath will provide a nature reserve and possibly also moorings for the boats using the adjoining 35 hectare lake!

A debate which concentrates on academic land-use planning and the appropriation of blame for the existing conflict is by and large a sterile one. We have an area of unique value on innumerable scientific counts, which is in danger of destruction by default. If the Shapwick Heath area is to be conserved, a conscious decision against the tide of market forces must be made, and the heavy financial costs borne.

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Historical aspects of heavy metal pollution in the Gordano Valley

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Introduction

It is an interesting prospect that heavy metal levels in successive layers of a peat deposit could indicate the amounts of heavy metal pollution at the time of peat formation. A few such palaeoecological studies have been attempted, notably by Lee and Tallis (1973) in England, Tyler (1972) in Sweden, and Pakarinen and Tolonen (1977) in Finland.

Lee and Tallis (1973) investigated the regional and historical aspects of lead pollution in Derbyshire. Similar studies have not yet been reported from the Bristol area where the long history of lead and zinc mining and smelting, associated particularly with the Mendips, provides an interesting background. Furthermore there are few, if any, other published reports in which metals other than lead have been considered in the same peat profile.

The Gordano Valley contains an extensive area of peat deposits of which both the present day vegetation (Willis and Jefferies, 1959) and the stratigraphy and palaeobotany (Jefferies *et al.*, 1973) have been described. The site is also within the general area around Avonmouth for which the present day distribution patterns of lead, zinc and cadmium in air, soils and vegetation have been reported (Little and Martin, 1972, 1974; Burkitt *et al.*, 1972; Gill *et al.*, 1975). The present paper is an attempt to correlate lead, zinc, cadmium and copper levels in a peat core from the

Gordano Valley with historical activities in the area.

Methods

A peat core was taken through late and post-glacial deposits on Weston Moor (Ordnance Survey Grid reference ST 448733). The area selected was within an apparently undisturbed area with *Filipendula ulmaria* (Meadow-Sweet) and *Phragmites communis* (Common reed) as the predominant plant species present.

Samples were taken with a peat-borer at successive depths using two closely adjacent boreholes to minimise disturbance of adjoining sections of the core. The cylinder of the peat sampler was cleaned after removal of each depth sample. The resulting peat core was divided into 2 cm lengths to a depth of 100 cm, and thereafter 5 cm lengths to the bottom of the core. Each sample was then subdivided longitudinally into three; the middle portion being used for pollen analysis and the other two for metal analyses.

Preparation of the pollen slides followed the methods of Godwin (1956) and Jefferies *et al.*, (1958). For each pollen slide at least 300 pollen grains were counted, including over 150 tree pollen grains. The pollen assemblages at different depths were used, together with the diagrams of Jefferies *et al.* (1968), to give the approximate zonation and hence the age sequence of the core.

Heavy metal analyses were carried out on two samples from each depth. The samples were dried, weighed, digested in Analar nitric acid, diluted and analysed for lead, zinc, cadmium and copper content using an atomic absorption spectrophotometer with automatic background correction.

Results

Fig. 1 presents the results of the heavy metal analyses with depth and also summarises the results of the pollen analyses as an approximate time scale through the core.

Detailed pollen analyses are not presented but our rather limited results (1 core) generally correlated well with the data of Jefferies *et al.* (1968). The only feature not considered by Jefferies *et al.* is the position of the zone VIIb/VIII boundary; most of their cores having been taken from areas with surface disturbance to a depth of up to 50 cm and from sites where much of the recent peat had been removed. The change from pollen zone VIIb to VIII corresponds to rapid deterioration of the climate and we have used an increase in beech, *Sphagnum* and willow pollen as indicators of this transition at about 70 cm depth.

Discussion

The relatively high levels of heavy metals recorded in the surface layers of peat (0-6 cm) are not unexpected; a major primary lead-zinc smelting works has operated at Avonmouth (10 km NE of the site) since 1929 and there is history of smelting activities in the Bristol area during the period of industrial expansion in the 18th and 19th centuries.

Fig. 1 also shows distinct peaks in all four metals at a depth of 50-60 cm. This appears to correlate well with the Roman period when lead and zinc smelting were known to occur on the Mendips (Gough, 1930). There is, however, little archaeological evidence of mining and smelting having taken place close to or within the Gordano Valley. Before discussing the possible archaeological relevance of these accumulations of metals in the peat profile we should consider the possibility that they could have arisen from other causes.

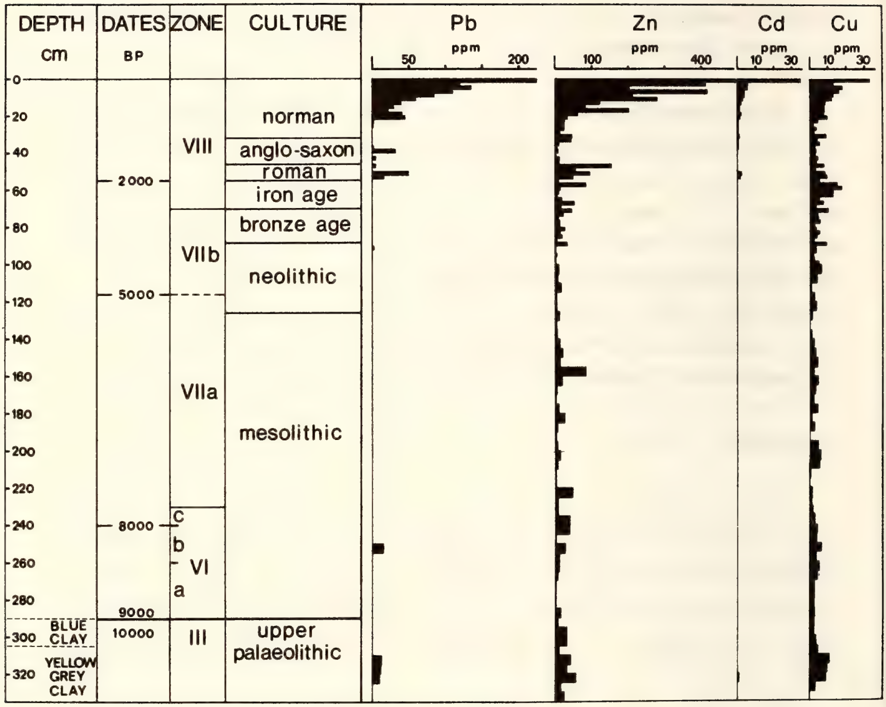

Figure 1. Diagram showing distribution of lead, zinc, cadmium and copper with depth in a peat-core taken from Weston-moor, Gordano Valley. Pollen zones, approximate dates (Before Present) and cultures are also shown.

Leaching of heavy metals from the surface could occur. However, the existence of a zone (26-38 cm) in which lead levels are low or virtually absent would not be expected between the high concentrations at the surface and the peaks at 50-60 cm; there are no great changes in the composition of the peat. If leaching had occurred it is unlikely that there would be an intervening layer devoid of lead because of the high metal binding capacity of peat. Furthermore, Lee and Tallis (1973) have suggested that in the case of lead, little or no movement down the peat profile occurred. However, Pakarinen and Tolonen (1977) have described peat profiles from Finland where there was some evidence of movement by leaching. This movement resulted in an enrichment layer at 20 cm depth and intermediate layers did not show an absence of lead. Pakarinen and Tolonen suggested that the differences between their results and those of Lee and Tallis was due to British peats being more humified and thus having a higher cation exchange capacity to retain lead.

A second possible explanation of peak metal levels in a peat profile is that during periods of slow peat accumulation and/or rapid decomposition of surface layers metal levels would increase. Thus a sample of peat from a standstill period could represent (for example) a thousand years of metal accumulation. Such periods of standstill in peat formation are usually marked by changes in the texture of the peat. No such irregularities were apparent at the 50-60 cm in the peat profile.

Elsewhere in the profile there are peaks for lead, zinc and copper in the 235-255 cm region which corresponds to the late Boreal period when peat formation was slow or at a standstill due to the warm, dry climate. The elevated levels of all four metals at the base of the profile correspond with the occurrence of blue marine clay at 290 cm and yellow-grey clay at 305 cm. These sediments are probably derived, at least in part, from surrounding areas of limestone which is often enriched with lead and zinc.

Thus it seems reasonable to conclude that the peaks of lead and zinc at depths of 50-60 cm represent a period of increased metal deposition probably during Roman times. A similar peak was noted by Lee and Tallis (1973) in a Derbyshire peat profile and interpreted as being associated with early (Roman) lead mining activities at a site 9 km away.

In the Gordano Valley profile it is not clear whether the metal peaks come from local small-scale smelting or manufacturing activity or from larger scale smelting and cupelling at greater distances. Elkington (1970) reports that smelting and cupelling took place in Roman times at Gatcombe, West of Bristol, a site some 8.5 km from the Gordano Valley. Other sites include the major lead settlement area at Charterhouse (18 km distant) and at Winscombe (13 km distant; Gough, 1930). The account by Gough also clearly suggests that in the post-Roman period, lead mining and smelting on the Mendips declined considerably and was largely intermittent and on a much smaller scale than in Roman times. Such conditions appear to have continued until the mid 16th and 17th centuries when there was a marked increase in the extent and output of the Mendip lead mines.

The results discussed should be regarded as preliminary and indicative that further work may be worthwhile. Much more intensive sampling, coupled with radio-carbon dating, is needed to establish with certainty whether the lead and zinc enrichment at 50-60 cm occurs in peat of Roman age. Such studies would also enable more accurate dating of the post-Roman parts of the profile.

Acknowledgements

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Stratification of water in the Severn Estuary : photographic evidence

by

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Introduction

The Severn Estuary is often regarded as a mixed estuary, meaning that tidal energy so mixes the water that the water column is homogenous from surface to floor and there are no horizontal differences between opposite banks. The Bristol Channel does have a seaward flow of water along the Welsh coast, accentuated after periods of heavy rain, and there is an influx of marine water along the Somerset coast (IMER, 1973). Nevertheless there is little difference vertically through the water column at any particular position (Abdullah *et al.*, 1973; Hamilton, 1973) so the observed disparity at the surface is not likely to result from the Coriolis force (caused by the Earth's rotation).

Greater mixing would be expected in the narrowing estuary, but Kirby and Parker (1977) found indications of horizontal differences even here and the different salinity regimes experienced by opposite shores during a tidal cycle are clear evidence of lateral differences. These observations are supported by photographic evidence described below.

During a survey of sediments in the Estuary, I obtained a coverage of Ordnance Survey infra-red aerial photographs (sorties OS/63/299, flown 20.9.1963, and OS/69/058 flown 3.4.1969). These photographs showed very distinct patterns of turbid and relatively clear water in the estuary; using a stereoscope it was even possible to discern submerged contours and to follow the progress of streams of water as they travelled through the estuary. Towards low water on the ebb tide, discrete streams are visible and distinguished on infra-red film by differences in their turbidity (Eastman Kodak, 1968). These streams may account for much of the apparent stratification of water masses in the estuary.

Results and discussion

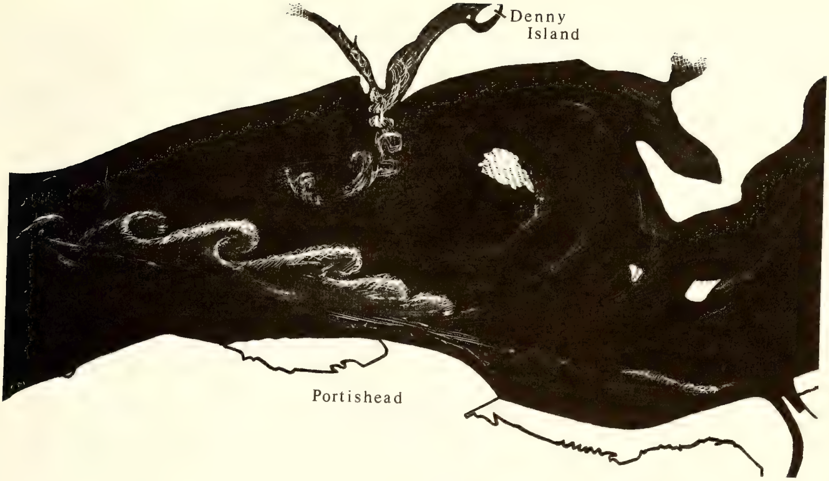
The main patterns revealed on the photographs are sketched in Figures

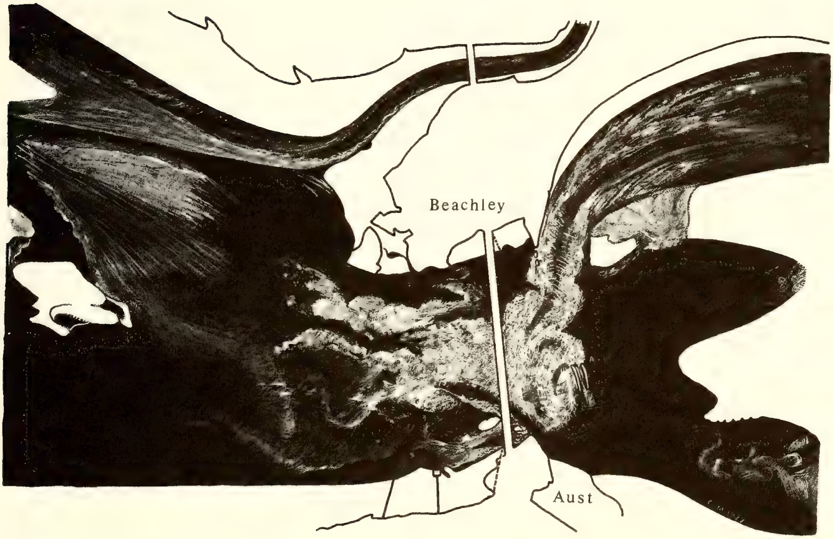
1 and 2. Figure 1 shows the channel between Portishead and the Welsh Grounds. The sweep of the current converges on the shore at Portishead before heading out across the estuary again as a narrow stream of very turbid water. A second stream of sediment-laden water runs off the Welsh Grounds into a relatively still part of the main channel below Denny Island. In the shallows upstream of Denny Island there is a clockwise swirl of water which becomes drawn into turbid current off Portishead and a regular series of turbulent 'billows' results, indicating a zone of shearing. The billows become more widely separated as they progress downstream, indicating that the current is gaining velocity.

A more complicated pattern is visible in the narrowing estuary around Aust (Figure 2). The run-off from Oldbury Sands into Slime Roads occurs at each indentation into the sand bank. Muddy water from Oldbury Lake enters as a long swirl which twists and winds its way seawards. By contrast, the cloud of sediment draining from the sands in the centre of the estuary plunges down the steep face of the bank and spreads on to the floor of the estuary. The water of Slime Roads is relatively clear and the bottom contours can be seen. This water is held back by the main ebb current which, having been confined to the opposite shore, is now deflected by the promontory at Beachley and crosses the estuary towards Aust in a line almost parallel with the Severn Bridge. Here in the deeper water, it spreads and swirls before gathering again on its downstream course.

The silt laden stream moves seawards rather slowly, as evidenced by its fluffy, turbulent appearance, keeping to mid-channel but descending to deeper levels as it goes. The clearer water held back in Slime Roads can only escape along the edge of the rocky shore at Aust and cuts a narrow path through the cloud of dirty water on its way towards mid-channel. Some of this water crosses the beach at Aust immediately below the Severn Bridge and, loaded with sediment, drops abruptly over the slope downstream of the projecting beach.

Below the Bridge, the highly turbid west-bank and the clearer east-bank currents appear to merge, but their mingling is obscured by large


Denny
Island
Portishead


Beachley
Aust

Figures 1 & 2. Tidal streams in the Severn Estuary at Portishead (1) and near Aust (2).

quantities of sediment which are collected as the shallowing water gathers speed across Dun Sands. Here too, the River Wye empties its silty water into the general mix. The main silt load of the Wye appears to be confined to near its banks and, presumably, to the bed of the river. On entering the estuary this rim of muddy water rotates clockwise around its core of clearer water so that the water from the left bank comes to lie at the surface. There is no immediate mixing of river water in the estuary but the river plume moves downstream at speed, divided by the protruding bank of Charston Sands.

Currents crossing the estuary from one side to the other and mixing to various degrees are made visible by the sediment load which they carry. Current speed can be gauged by the streaky or puffy appearance of current streams in photographs. The available photographs represent only one state of the tide but show how differences in water characteristics could arise between sites such as Beachley and Aust although they are separated by only a narrow channel. The extended ebb of the tide in the upper Severn Estuary provides an opportunity for the separation of current streams particularly as the water level falls and sand banks effect a more complete segregation of water bodies. The fast flood might be expected to bring about a total mixing but there are still differences between water samples taken from opposite banks (unpublished data). There is every hope that lateral water movements could be determined for various states of the tide by a remote sensing technique; indeed, the information may already be available from satellite photographs.

Acknowledgements

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A survey of the dragonflies of Gloucestershire with notes on their distribution and habitats

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Introduction

The purpose of this present paper is twofold. Firstly, it presents the results of a preliminary survey of the Dragonflies (Odonata) of Gloucestershire, and combines these with pre-1977 data, which were gathered from a variety of sources. Secondly, it serves to demonstrate the serious lack of knowledge on the distribution and habitat requirements of our Dragonflies. It is hoped that this lack of knowledge may stimulate interest in this fascinating group of insects, and enable more intensive data gathering than would be possible by the author alone. It may also enable the area of the survey to be extended to include the neighbouring counties of Somerset and Avon, which contain habitats not found in Gloucestershire. The methods for recording are discussed in the next section.

Dragonflies are entirely aquatic in their larval stages, and it is this medium which is of major importance in governing distribution. Therefore, the rest of this section is taken up with a description of the types of aquatic habitats found in Gloucestershire.

Ecologically, Gloucestershire is a diverse county. Basically, it is bisected by the River Severn, to the East of which lie the Cotswold Hills, and to the West, the Forest of Dean. Immediately adjoining the Severn is a flat, low-lying area of clays; the Severn Vale. To the North, this latter area spreads out and runs into the sandstones of the Midland Plain. Unfortunately, little data were gathered from this latter area.

The Cotswolds are composed of Oolitic Limestone, and consequently most of the water in the area is fairly base-rich. In the Northern Cotswolds, most of the aquatic habitat consists of small rivers draining into the Thames. These are suitable for a few specialised, running-water species of Dragonflies, as well as one or two very generalised ones, but there is not the diversity of species found on still water. In the

Southern Cotswolds, the area of standing water is much increased by the presence of gravel pits and disused canals. Gravel pits are very extensive around Fairford and South Cerney, and hence this area is of prime importance for Dragonflies. Since these gravel pits were not all created at the same time (indeed some are still being worked), and since they vary tremendously in size, vegetation-type, disturbance etc., they represent an excellent natural experiment in rates of colonization, habitat preferences and susceptibility to disturbance. Therefore, as many records as possible are needed from this area.

Most of the ponds of the Severn Vale are also fairly base-rich, since the underlying Liassic clays are quite calcareous. Further, these clays are less well drained than the porous limestone of the Cotswolds, and this, combined with the high water table near the Severn, results in ponds being more numerous on the vale, when compared with the Cotswolds. This is especially so between Gloucester and Tewkesbury, and at least one local Dragonfly may be restricted in Gloucestershire to this area.

A few slow-flowing rivers drain into the Severn across the Vale, and there are also a few small gravel pits, older than those of the Fairford area, around Frampton-on-Severn. Canals form the last major habitat for Dragonflies on the Vale. Well-used ones, such as the Sharpness Canal have virtually no Odonata associated with them, but derelict canals, especially those with good vegetation cover, may have a fairly diverse fauna. Indeed, most of the standing water in the Vale appears well-stocked with Dragonflies.

The ponds of the Forest of Dean present a complete contrast. They are fairly numerous, but are much more acid than those of the Vale or Cotswolds. This effects both the flora and fauna, although the exact effect on the Dragonflies is as yet unclear. The Forest of Dean is also criss-crossed by numerous small streams. In general these are poor habitats for Dragonflies, although some have one or two species associated with them. Acid bogs were once common in this area, and although most have now been drained and planted with conifers, one or two remnants may be found (e.g. Foxes Bridge Bog). Bog pools are characteristically rich in Dragonfly species, but the patches remaining in Gloucestershire are probably too small to support a particularly diverse or interesting fauna.

Two large rivers, the Severn and the Wye, flow through Gloucestershire. Upstream of Gloucester, the Severn provides suitable habitat for riverine species, such as *Platycnemis pennipes*, and one or two very generalised species. The River Wye is one of the few localities in Britain for the uncommon riverine dragonfly, *Gomphus vulgatissimus*. This species was found in some abundance on the Wye in Herefordshire in 1977 (Parker; in press), and although it was not recorded in Gloucestershire by the present author, there are in existence a number of older records for the stretch of the Wye near Staunton. It would be interesting to know the present status of this species in Gloucestershire.

Methods

As many aquatic habitats as possible were visited during the summer of 1977. A six figure grid reference was recorded for each locality, and a brief sketch map drawn. Odonata were identified in the field. The small damselflies were caught in a 10" butterfly net, to confirm identification, whereas specific identification of the large dragonflies was carried out at a distance, using Zeiss 10 x 50 binoculars. The latter technique was used because of the extreme difficulty in either approaching or catching these larger species. Luckily, all of the British species have specific characters which are easily discernible by such methods.

Apart from identifying all the species present at a given site, the following information was also collected. The behaviour of members of each species was recorded as falling into one or more of the following categories:

(1) Males defending territories, i.e. contests between members of the same species, or individuals regularly patrolling the same beat.
(2) Females ovipositing.
(3) Any other behaviour.

The abundance of each species was recorded as either 'very abundant', 'common' or 'rare'. If any species were restricted to one part of the pond or stream, this too was noted. The time of day and weather are also important factors to be noted.

Habitat data were also gathered. These included firstly whether the water was running or still, and then, for still water, the approximate area and substrate, and for running water, the width, approximate flow rate, and substrate. For all habitats, the dominant species of vegetation were recorded under three headings; emergents, submergents and floating. The distribution of each of these vegetation types over the site were also recorded. Surrounding land use and shading around the site were briefly noted. All this information was stored on index cards, one for each species at each locality.

It should be noted that in order to record fully from each site, several visits are necessary, as different species fly at different times. This was not always possible and consequently many species will be under-recorded.

For anyone wishing to contribute to the continuation of this survey, but who are unfamiliar with the British species, an excellent guide is now available (Hammond, 1977).

Results

The results are presented firstly as a series of maps, showing the county wide distribution of each species, as it appeared at the end of 1977. A brief comment is also made on the status of each species in Gloucestershire. No detailed analysis of the results has yet been made, as the data is, at present, insufficient. However, the maps presented here have already added considerably to the last published maps (Hammond, 1977). Further, certain trends are beginning to emerge, and these are commented upon.

Zygoptera (Damselflies)

Agrion virgo Fig. 1

Found on a few, well-vegetated, gravel-bottomed streams, on both sides of the Severn. In 1977, it appeared not to be very common, and even on those streams on which it was present it did not appear to exist in large numbers.

Agrion splendens Fig. 3

Commoner than the last species, and found on a wider variety of streams and rivers, usually those with plenty of submerged vegetation.

Coenagrion puella Fig. 4

Common on a wide variety of aquatic habitats, including rivers, canals and ponds of all sizes.

Enallagma cyathigerum Fig. 5

A very common species on gravel pits, ponds etc., although not as frequent on moving water as the last species. It has been found on fairly new gravel pits, with very little vegetation.

Erythromma najas Fig. 6

An uncommon species, found, in 1977, only on Lightmoor Pond, and Frampton Pits, both fairly large ponds. In both cases the damselfly was restricted to one small area of the site. A possible record exists for this species in the Cotswold Water Park.

Ischnura elegans Fig. 7

This is probably the commonest species in the county, being found on almost all types of aquatic habitats, from small field-corner ponds to large gravel pits and slow-flowing rivers.

Pyrrhosoma nymphula Fig. 8

A very common species, found mainly on ponds, in Gloucestershire. It can be the most abundant damselfly on some ponds.

Lestes sponsa Fig. 9

Apparently, a local species in Gloucestershire, occurring on only a few ponds and old canals, on both sides of the Severn. In fact, this species may have been under-recorded in 1977, since it flies late in the season, when the author was unable to do much fieldwork.

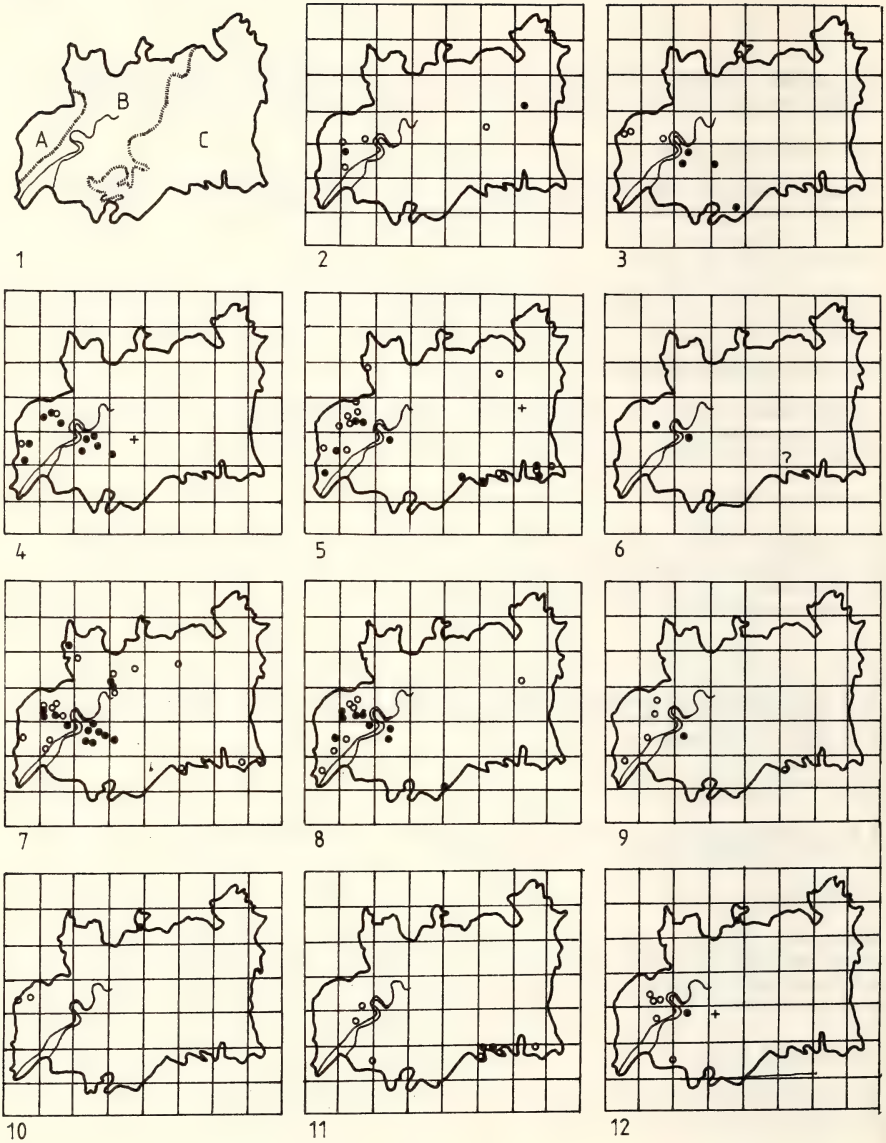
Platycnemis pennipes Fig. 10

Not uncommon on one or two of the larger slow-flowing rivers. It can occasionally be locally abundant.

Anisoptera (Dragonflies)

Aeshna grandis Fig. 11

Not uncommon around gravel pits in the Cotswold Water Park, even those which are much used.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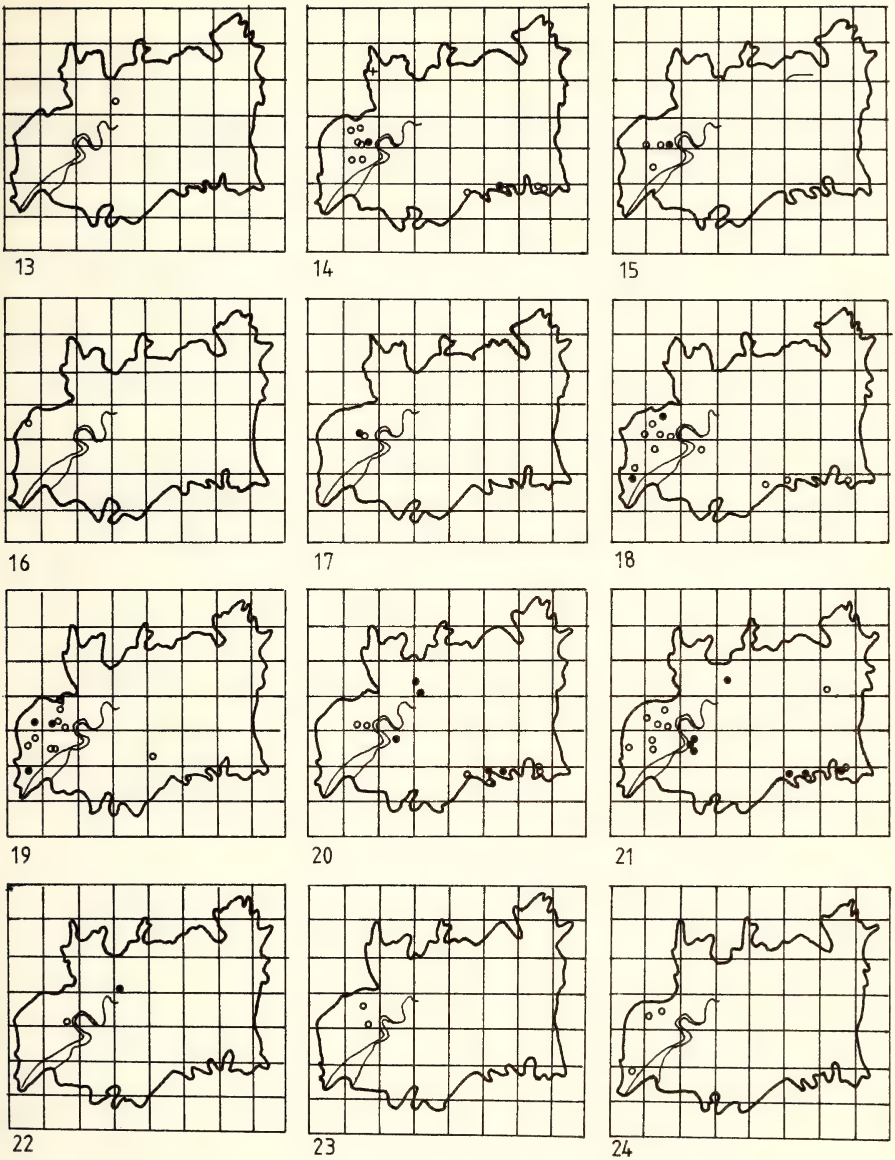
FIGS. 1-12



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FIGS. 13-24

Aeshna cyanea Fig. 12

Possibly the commonest member of this genus in Gloucestershire. It is found on many of the larger ponds on both sides of the Severn, and can often be seen well away from water as well.

Aeshna mixta Fig. 13

An uncommon species in Gloucestershire, where it has been recorded from a few small ponds along the Severn.

Anax imperator Fig. 14

Not uncommon on a number of larger ponds and gravel pits, both in the Forest of Dean, and the Cotswolds.

Cordulegaster boltonii Fig. 15

This species was not recorded in 1977. Old records exist for two separate fairly small, slowly-flowing streams in the Forest of Dean and a third for a large pond, where a female was ovipositing in gravel bays. The solid circle represents a record for 1978, which again is from a small, slowly-flowing stream.

Gomphus vulgatissimus Fig. 16

Old records exist for this species on the Wye near Staunton. It was not seen in 1977. It is likely that the Wye provides the only suitable habitat for this species in the county.

Cordulia aenea Fig. 17

This species appears to be restricted, in Gloucestershire, to a very few ponds in the Forest of Dean.

Libellula quadrimaculata Fig. 18

One of the commoner large dragonflies, being found on a wide variety of ponds, from the base-rich Cotswold gravel pits, to very acid pools in the Forest of Dean.

Libellula depressa Fig. 19

Common in the Forest of Dean, where it is likely to occur on even the smallest of ponds.

Orthetrum cancellatum Fig. 20

Occurs on a variety of ponds and gravel pits, and may be very numerous on some sites, especially the newer gravel pits. It was even found on some badly polluted ponds, although in this case no egg-laying was observed.

Sympetrum striolatum Fig. 21

Common on a large variety of still-water habitats, including gravel pits, old canals, ditches, flooded quarries, and small ponds. It is often the most abundant Anisopteran on some sites.

Symeptrum sanguineum Fig. 22

Only two records for Gloucestershire exist. In 1977 it was recorded on a small pond by the Severn. Here, the species is restricted to an area of the pond which is well-covered with *Typha latifolia* and *T. angustifolia.* The pre-1977 record is for a site with similar large patches of tall emergents.

Sympetrum scoticum Fig. 23

Surprisingly this species was not recorded in 1977. It has previously been recorded from two typical Forest of Dean ponds.

Aeshna juncea Fig. 24

Pre-1977 records exist for a few ponds in the Forest of Dean. The larvae and adults of this species are very similar to *A. cyanea*, but the present species usually appears to prefer smaller, or more acid ponds.

Discussion

Gloucestershire has a wide variety of aquatic habitats, and this is reflected in the Dragonfly fauna, which is very rich, especially when compared to the neighbouring county of Herefordshire. In a survey of Herefordshire Dragonflies, Parker (in press) recorded fourteen species compared to nineteen species in a similar period in Gloucestershire. A further six species have been recorded for Gloucestershire in the past five years, bringing the total to twenty-five. The reason for such a difference in two adjacent areas is probably the lack of suitable habitat in Herefordshire, which has few ponds and lakes (most of the farm ponds being either silted up or filled in; Parker (in press). The county does, however, possess a number of rivers. Unfortunately, the Dragonfly fauna of rivers is somewhat limited, many species being more or less confined to still water. These are therefore absent or rare in Herefordshire, whilst being common in Gloucestershire. Even those generalised species, which can live in running or still water, and are common in Gloucestershire, may become much rarer in Herefordshire, where they are mostly riverine in habits. This is probably the case with *C. puella*, which is one of the commonest damselflies in Gloucestershire, but which is recorded as a localised river species in Herefordshire. The very similar looking *E. cyathigerum* is much commoner in Herefordshire, and in Gloucestershire, it is one of the few species found on relatively new gravel pits. From the results so far, therefore, it appears that this latter species has a wider choice of habitats than *C. puella*.

Orthetrum cancellatum is another early colonist, which was found in great abundance on some of the newer Cotswold gravel pits. More data are needed to establish the succession of Dragonflies in a new pond or pit, and also the fate of the early colonists.

Sympetrum sanguineum, Aeshna mixta, and *Cordulia aenea* have all only been recorded from one or two sites each. Allowing for the fact that the survey is by no means complete, there does seem to be an abundance of suitable habitats that have not been colonised by these species. It is impossible to say at present why this should be so. Probably the reasons are to be sought in competition with closely related species, and with physiological and behavioural specialisations of the larvae. More habitat data may clarify the situation.

The most diverse faunas appear to be associated with the more acid Forest of Dean ponds, although the densest populations of damselflies (mainly *I. elegans* and *C. puella*) were found on the ponds of the Severn Vale (at least in 1977). The smaller ponds usually have fewer species, often lacking members of the family Aeshnidae. The smallest ponds often only contain *Libellula depressa* and possibly *E. cyathigerum.*

From the above paragraphs, it is obvious that a large number of questions remain to be answered concerning the distribution of Dragonflies. It is hoped that members of the Society will help in continuing this survey by sending all records of Dragonflies, no matter how incomplete, to the author, at the above address.

References

Hammond, C.O. (1977) *The Dragonflies of Great Britain and Ireland.* Curwen Press, London.

Parker, D.M. (in press) A survey of the Dragonflies of Herefordshire.

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DR. A. F. DEVONSHIRE,
59 FALCONDALE ROAD,
WESTBURY-ON-TRYM,
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PROCEEDINGS OF THE BRISTOL NATURALISTS' SOCIETY

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1978

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REPORT OF COUNCIL 1978

Membership at the end of the year stood at 779 including 26 juniors. At the Annual General Meeting the officers and members of Council were elected with Mr. D. Hamilton continuing as President.

The annual supper was held in March with Mr. A. Parsons as guest speaker on "Steep Holm".

We regret to announce the deaths of:

Mrs. H.H. Davis
Dr. V.A. Eyles
Mr. H.W. Neal
Mr. B.W.C. Poole
Dr. J.O. Smith

REPORT OF THE BOTANICAL SECTION, 1978

At the Annual General Meeting in the Botany Department Herbarium on 23rd January, 1978, the following were elected:-
President: Dr A.F. Devonshire; Secretary & Treasurer: Miss I.F. Gravestock;
Committee: Dr T.E.T. Bond, Mrs C.H. Cummins, Mrs N. Vaughan Davies, Mr A.L. Grenfell, Mr C.H. Hurfurt, Mr P.J.M. Nethercott, Mrs A. Royle, Mrs T.B. Silcocks & Dr M.C. Smith.

The following winter meetings were held:-

23 January: Annual General Meeting and Members' Evening.
27 February: A North-Country Evening. a) Plants of the High Pennines by Miss I.F. Gravestock. b) The Glencoyne Valley, Cumbria by Mrs Vaughan Davies.
13 March: Symbiosis, and especially Symbiotic Algae, by Professor D.C. Smith, F.R.S.
23 October: Plants of Andorra, by Mr C.H. Cummins.
4 December: The Structure of Diatoms, as revealed on the Scanning Electron Microscope, by Dr F.E. Round.

The following field excursions took place, under the leadership of those shown:-

18 March: Practice in the Identification of Conifers at Bracken Hill. Dr M.C. Smith.
22 April: Westonbirt Arboretum. Mr P.J.M. Nethercott.
20 May: Westridge Wood. Mr C.H. Hurfurt.
3 June: Lamplighters and Shirehampton Marshes. Miss I.F. Gravestock.
1 July: Inglestone Common and Lower Woods, Wickwar. Mrs Royle and Mrs Silcocks. *Neottia nidus-avis* and *Epipactis purpurata* seen.
15 July: Winterbourne and Bury Hill. Mr A.L. Grenfell.
18 July: Westbury-on-Trym. Dr A.F. Devonshire.
29 July: Avening Green. Mrs Vaughan Davies.
20 August: Identification of Aliens at Bracken Hill. Dr M.C. Smith.
16 September: Pill to Suspension Bridge. Mr P.J.M. Nethercott.
23 September: Avonmouth Docks. Mr A.L. Grenfell.
7 October: Fungus Foray to Westonbirt. Dr T.E.T. Bond. Joint Meeting with British Mycological Society.

I.F. GRAVESTOCK, *Hon. Secretary*

REPORT OF ORNITHOLOGICAL SECTION, 1978

During the year 15 indoor meetings were held, of which 9 were meetings designed for beginners, including an autumn course of 8 lectures covering all aspects of ornithology, which, though well supported by 30 people at the start, had only some 15 at the end. The six main indoor meetings had an average attendance of 39, and only two, the Film evening and the talk on the Status of Geese, exceeded 30, which was disappointing. 24 Field trips were held, attended by roughly 15 people on average. Trips to areas in the immediate locality were well supported, but it proved difficult to fill a coach to visit any more distant venue.

The section continued to support a wide variety of national and local surveys, including the Golden Plover Survey, the Swan survey, the Nest record Scheme, and its own surveys into Birds in Gardens, the Birds of the Tidal Avon, the Martins of Bristol, Bunting distribution in Avon, overwintering warblers, and Kestrels in Bristol. At the end of the year a gull study group was established, and an experimental Winter Tetrad survey was begun.

At the 55th AGM, Miss J. Humphries was elected as President, and H. Rose as Treasurer. R. Bland was re-elected Secretary. Four committee members retired, Miss Harris, S. Hammacott, R. Chadwick and P. Farner. In their stead P. Chadwick, B. Gray and H.S. Walker were elected.

R.L. BLAND, *Hon. Secretary*

REPORT OF MAMMAL SECTION, 1978

At the Annual General Meeting the following officers were elected for 1978:- President: Mr A.F. Jayne; Secretary/Treasurer: Mr R.A. Burberry; Mammal Recorder: Mr A.F. Jayne; Committee Members: Miss E.J. Lenton, Mrs C. Kitchen, Messrs M. Chapman, M. Kitchen, R. Surch and G. Walker.

5 indoor meetings were held:-

January 10:	AGM and Members' Contributions.
February 10:	Seals in Britain. Miss S. Anderson.
October 10:	Badgers. Dr C. Cheesman.
November 14:	Whales and Whaling. Dr P. Evans
December 12:	Rabies. Mr N. King.

The four lectures attracted improved support.

The following field meetings were held:

January 29:	Fox Spotting in Bristol. Mr R.A. Burberry.
April 9:	Amphibian Hunt. Mr R. Surch.
April 22/23:	Live Trapping - Leigh Woods. Mr S. Nicholls.
May 5, 12, 19, 26:	Badger Watches. Mr A.F. Jayne.
May 21:	Early morning watch. Mr R.A. Burberry.
June 11:	Middle Hope and Sand Point. Mr M. Chapman.
June 25:	Early morning watch. Mr A.F. Jayne.
July 16:	Badminton Deer Park. Mr M. Penistan.
July 23:	Early morning watch. Mr R. Surch.
August 11:	Roe watch at Gare Hill. Mr R.A. Burberry.
August 19/20	Live Trapping - Leigh Woods. Mr G. Walker.
September 17:	Wetmoor. Mr A.F. Jayne.
October 14:	Berkeley Deer Park. Mr M. Hill.
November 19:	Offa's Dyke & Wye Valley. Mr C. Titcombe.
December 10:	City Parks. Mr M. Kitchen.

A joint weekend with the Mammal Society was held in Bristol on March 11 and 12. A number of lectures, several by B.N.S. members, were given on the 11th and four field meetings were held on the 12th.

Several field meetings had to be cancelled for various reasons.

Mammal records were the highest number since the recording scheme commenced.

R.A. BURBERRY, *Hon. Secretary*

REPORT OF GEOLOGICAL SECTION, 1978

The Annual General Meeting of the Section took place on 12th January, 1978. The following were elected:-
President: Mr V. Dennison; Vice-President: Mr N. Hollingsworth; Secretary: Miss C.J. Mayle; Field Secretary: Mr D. Hamilton; Committee: Professor D.L. Dineley and Student President of the University Geological Society (both ex-officio), Mr T. Harrison, Miss E. Pounder, Mr P. Thompson, Mrs G. Hamilton, Mr A.E. Frey, Dr A.B. Hawkings, Dr J.O. Smith, co-opted member: Mrs M. Milton.

The following indoor meetings took place during the year:-

12 January:	Annual General Meeting and Presidential address: Protection of Geological Inventions
16 February:	Base metal mineralization in the Mendip Hills. Mr C. Alabaster
16 March:	Radiation from rocks and minerals. Mr I. Ford.
19 October:	Late Quaternary Sea-level changes in Eastern Scotland. Dr R.A. Cullingford.

16 November:	The making of a soil map. Mr D. Findley.

The following outdoor meetings took place:

8 January:	Joint General/Geological: Penarth, Sully Island and Barry Island. Mr H.G. Hockey and Mr D. Hamilton.
20 May:	Doniford Bay, Watchet. Dr R. Bradshaw.
30 July:	Quarries at Chipping Sodbury. Mr D. Hamilton.
10 September:	Joint General/Geological: Charmouth, Dorset. Mr H.G. Hockey and Dr D.J. Cowie.

C.J. MAYLE, *Hon. Secretary*

REPORT OF ENTOMOLOGICAL SECTION, 1978

President:- Mr G.R. Best

Secretary:- Mr B.S. Harper

The following meetings were held during 1978:

3 January	Annual General Meeting	
7 March	Avon Entomological Survey Meeting	
4 June	Westbury, Wiltshire	Leader Mr G.R. Best
1 July	Midger Wood	Leader Mr M. Peniston
22 July	Providence Hill, Long Ashton	Leader Mr B.S. Harper
19 August	Worldwide Butterflies & Lulworth Cove	Leader Mr A.R. Nicols
10 October	Annual Members Evening	
21 October	A.E.S. Annual Exhibition	
7 November	My Kind of Entomology	
15 December	Avon Entomological Survey	

On the second Saturday of each month, the Leigh Woods Survey meetings were held.

B.S. HARPER, *Hon. Secretary*

ACCOUNT OF GENERAL MEETINGS 1978

19 January	'At Sea in the South Western Approaches' Presidential Address Mr D. Hamilton.
2 February	'Wild Life and the Farmer' Speaker Mr P. Tolson.
2 March	'Eastward Ho!' Speakers Miss E. Fleure, Miss M.H. Rogers
5 October	'The Countryside and Rural Life in China' Speakers Miss E. Fleure, Miss M.H. Rogers.
9 November	'Defence and Offence in the Ocean' Speaker Dr T.E. Thompson.
7 December	'Techniques in Natural History' Speakers representative from the Ornithological, Botanical and Entomological sections of the Society.

GENERAL FIELD MEETINGS, 1978

Fifteen field meetings were held and were generally well attended. In addition to the ordinary meetings three mid-week rambles were held. A list of the meetings with leaders and an indication of things seen is given below. A fuller account is kept in the records of the Field Committee. In the following list the leader is given first followed by the area visited.

8 January	Mr H.G. Hockey and Mr D. Hamilton. Cliffs at Penarth and Sully Island. Birds and geology.
24 March	Mr H.G. Hockey. A walk from Walton Hill, near Glastonbury to the monument to Admiral Hardy. Then a visit to the ruined Norman Abbey at Muchelney.
29 April	Miss C. Groves. Brean Down. A good number of interesting plants were seen, and a few birds.
21 May	Mr H.G. Hockey. Small Grain Plantation, Morgan's Hill. A walk over the Downs. Some plants and birds were seen, and Wansdyke and Roman Road.
6 June	Mr D.A.C. Cullen. Stantonbury. An evening meeting. Many birds were seen and a good number of plants.
17 June	Miss R.C. Lee. Wylye Valley, near Sherington. A large variety of plants, including several orchids, and many birds.
27 June	Mr A.C. Grenfell. Marshfield. An evening walk along a limestone valley. Many plants, including the rare pea, *Tetragonalobus maritimus*.
5 July	Dr A.F. Devonshire. Blaise Castle. An afternoon walk mainly concerned with the history of Blaise Castle House and grounds.
9 July	Miss J. Cos. Wells. In the morning a walk along Tor Hills Nature Trail. In the afternoon a visit to the Bishop's Palace. The grounds contain a fine collection of exotic trees, including a Cyprus Cedar. On the way home waterfowl were seen at Heron's Green.
12 July	Mr R.N. Curber. Kennet & Avon Canal. An evening walk along the canal near Dundas aqueduct. Water-birds, canal-birds and a good variety of plants were seen.
9 August	Mrs Anne Royle. An afternoon walk along the Avon near Sea Mills. Many plants, including *Cupleurum tenuifolium*.
12 August	Dr A.F. Devonshire. Neroche Forest (between Taunton and Chard). The party walked along the Nature Trail for 3 hours. The Forest contains a good variety of broad leaved and coniferous trees and the earthworks of a castle. On the way home the party stopped at Glastonbury where there is a fine collection of trees in the Abbey grounds.
10 September	Mr H.G. Hockey and Dr Speedman. Charmouth. One party explored the geology of the area, and another party walked over Stonebarrow Hill for birds and plants.
21 October	Mr R.N. Curber. Portland Bill and Weymouth. A very good variety of birds and some interesting plants were seen at Portland Bill, and Ceti's warbler and bearded tit were seen at Radipole Lake.
5 November	Miss R.C. Lee. Frocester Hill and Uley. A circular walk including Uley village and Uleybury. Autumn colour and Cotswold architecture.

A.F. DEVONSHIRE, *Hon. Field Secretary*

The supervised opening hours continued this year, during which 62 members made 256 visits to the library. Of these, 57 registered, and borrowed a total of 318 items. These figures show a substantial increase on last years.

We are very grateful to those who have donated books and journals to the library, including Mrs Forrest, Miss Gravestock, Dr Cowie, Dr Avery, Mr Poulding, Dr Savage, and particularly to Mr J. Barrett who gave 17 books. Altogether 39 books were added to the library. The replacement of missing journals by purchase also continued where possible.

Acknowledgement must also be made to all members who have helped in any way with library affairs, in particular Mrs M. Gray for cleaning and labelling bookcases and for caring for the leatherbound books, and Dr Rose for checking the Ornithological Section.

Once again, we must also record our gratitude to those who provide us with accommodation, namely the Direction of the City Museum and Art Gallery, and the Librarian of the University of Bristol.

JENNIFER SCHERR, *Hon. Librarian*

OBITUARY: MRS M.L. DAVIS

Mabel Lucy Pierce was born 7th May 1902 at Bristol and was educated at Colston Girls School. She belonged to a farming family and in 1931 married into another farming family to Howard Henry Davis of Little Stoke, Patchway where they farmed until the late fifties, retiring first to Clapton-in-Gordano, then to Winscombe and lastly to Bristol. Both joined the Society in 1932. Her husband's immense services to this Society and to local ornithology and conservation should not cause us to pass over her very considerable contribution to our well-being especially in the fifties. She was secretary of the Botanical Section for six years from 1950 to 1955. She lectured to the Section on botanical visits to the Scilly Isles, Switzerland and South Africa and (in the days when the Society held exhibitions) displayed cornfield weeds and plants of the Severn saltmarshes, in the vegetation of which she was at the time particularly interested. In the early fifties she made a number of visits to the Denny and Steep Holm and for both these islands added fresh records of their flora. Her activity in this regard enabled other botanists including

J.E. Lousley to visit Steep Holm. She had a very good knowledge of the local flora and was a keen gardener. She frequently assisted visiting botanists to view unusual plants of our area. Her invitations to Little Stoke Farm to visit Savages Wood will be enjoyably recalled by our older members. She was a capable flower photographer.

In later years we did not see much of her at meetings but these were the times when she was caring for her husband in his long and debilitating illness to his death in 1974.

She was a lady of wide interests. When at Little Stoke she was for several years a Justice of the Peace sitting at the Staple Hill bench. She had a lifelong interest in art and herself painted still-life and landscape. The last days of her life were spent on a painting holiday at Minchinhampton where she was taken suddenly and gravely ill and died at Gloucester on 13th June 1978.

She is survied by their only son Dr Martin Davis to whom the Society extends its sympathy.

P.J.M. NETHERCOTT

AVON MAMMAL REPORT 1978

by

A. F. JAYNE

The number of mammal species recorded in the area during 1978 was 30. The overall total, since the start of the Avon County recording scheme in 1976, now stands at 36. A coypu (*Myocastor coypus*) was the first recording of this species since regular recording commenced in the Bristol region in 1965, since when 43 different species have been recorded.

This figure is of course an exaggeration of the true picture by the inclusion of several one-off oddities of dubious value. Two of these, the coypu (1978) and the Chinese water deer (1971) were almost certainly escapees from the same private collection of animals, whilst the lesser rorqual whale stranded at Beachley (1972) can be counted as a freak occurrence. The polecat, trapped by a gamekeeper at Tortworth (1971) raised expectations that the gradual spread of this mustelid from West and Central Wales had reached our area. However no further occurrence has been reported. The other single record was of a Brandt's bat found dead in a garden at Sutton Wick (1972). This is the seventh species of Chiroptera noted in the area from a total number of 18 listed in the checklist of mammal species in Great Britain and Ireland by G. B. Corbet (1975). The order Chiroptera represents the most likely source for new species in the County and is deserving of further studies.

The recorder is indebted to the following 92 members and friends for supplying the 872 records which form the basis of this report and from which the annual distribution maps for each species will be compiled:-

Mrs M. Badger, M. R. Ballard, R. Bennett, *R. L. Bland, R. Brown, *Mrs M. Browne, L. Buckingham, *R. A. Burberry, Mrs V. Burberry, J. F. Burton, Mrs V. Burton, *P. J. Chadwick, *M. J. Chapman, Mr Crooke, A. Dowdall, Mrs Dowdall, Mr Dunnicliffe, T. G. Evans, P. G. Farmer, A. S. Ferguson, Miss D. Fowler, Mrs D. Grant, J. Grant, Miss I. F. Gravestock, A. K. Grenfell, Mrs D. Grenfell, M. Guffey, *H. R. Hammacott, F. G. Hansford, Dr S. Harris, Miss C. J. Haskins, L. Hawden, Miss A. Heyward, B. Hillyer, R. W. Howard, *Mrs J. Humphris, *A. F. Jayne, Miss H. Jayne, Mrs P. Jayne, H. Jeffery, Mrs B. Keast, Mrs B. Kelly, P. King, Mrs C. Kitchen, M. A. R. Kitchen, D. E. Ladhams, Mrs R. E. Lailham, D. B. Latham, Miss R. C. Lee, *Miss E. J. Lenton, D. Loveridge, D. C. Mainhood, Mrs M. A. Mainhood, F. Marshall, *A. D. Morgan, Dr P. Morris, A. W. S. Murphy, R. Palmer, D. Pictor, J. C. Phillips, Mrs J. E. Phillips, Mr and Mrs J. G. Prince, *Dr H. E. Rose, Mrs R. Rose, A. E. Richards, Dr R. J. G. Savage, S. D. Sayers, D. J. Semmens, R. Semmens, K. F. Slade, G. F. Slater, M. Slocome, L. J. Smeed, D. V. Smith, A. Stanton, B. Stanton, Mrs M. Stanton, Miss S. Stanton, R. Stocks, R. Surch, Mrs M. Taylor, R. G. Thomas, Mrs S. Tovey, D. F. Troke, G.F. Upton, J. D. R. Vernon, Mrs P. Walker, J. Ward, R. Wildgoose, R. Williams, Miss D. Wood.

Those whose names are prefixed with an * contributed 10 or more records. Check list numbers are taken from Corbet (1964).

1. HEDGEHOG. Reports were received of hedgehogs for all months of the year except February. The peak months were July and August with 24 records each. A significant difference to the normal yearly spread of sightings was a notable increase in November, with 23 reports, 19 of which were road casualties. This increase could be attributed to the long dry autumn, which would affect the supply of the main food items of this species, i.e. slugs, snails and worms which in turn would slow down the rate of increase in fat for winter hibernation. The mildness of November and early December could also have been a contributory factor. A "heap of leaves" under a bush in a Westbury-on-Trym garden contained a hibernating hedgehog during December (1977) and January. An investigation on 5th March showed the nest to be empty. A second nest, in the same garden, was discovered behind a garden-roller on 12th March with a hedgehog curled up inside (R.C.L.). A dead one, estimated to be half-grown was found in a Frampton Cotterell garden on 3rd April (M.S.). Of the 132 records 112 were of road casualties. Two others were fortunate not to increase this number as one driver (A.S.) stopped in the road outside Nailsea Fire Station and removed a curled up animal to enable himself to continue his journey. Another driver (A.F.J.) stopped in a lane near Downend to allow a half-grown hedgehog to continue crossing. This animal flinched when caught in the headlights but did not curl up. It proceeded at a leisurely pace appearing completely unconcerned. Two reports of adults with young in gardens were received one of "a female with two young, about four inches long" (J.C.P.) and the other of two adults and three young (P.J.C.). An animal was watched for two hours in a Thornbury garden, during the early evening, before it disappeared into a compost heap (A.R.B.).

2. MOLE. All the records received for the year were of molehills, mostly seen during the months from January to April in open grassland. They are of course much easier to see when the grass is short. Many may be overlooked in woodland where the molehills are often difficult to see in the undergrowth and litter layer. The previously well-colonised sites in the Hambrook/Winterbourne area from which the molehills disappeared following the 1976 drought still appear to be devoid of moles (A.F.J.). Many molehills were seen from the roads over a wide area in the Charterhouse-Cheddar neighbourhood - a total of 27 one km squares being recorded in two visits (A.F.J.).

3. COMMON SHREW. Discarded bottles again proved to be the best source of evidence for this species (A.F.J., P.M., E.J.L., M.B.). Of 46 bottles found with small mammal remains inside 31 contained common shrew skulls. Eighty-five of the 161 skulls recovered were of this species. The others recovered were six pygmy shrews, 19 *Apodemus* species, 13 bank voles and 40 field voles. Three bottles contained totals of seven, nine and ten common shrew remains respectively (A.F.J.). A fourth bottle found in Downend contained remains of five different species of small mammals (A.F.J.). A screw top "pop" bottle found in a closed-off length of an old roadway in Winterbourne was densely packed with bones and fur of decomposed animals (A.F.J.). Close examination revealed 23 mammals - 14 common shrews, three woodmice, one bank vole and five field voles. The bottle was so full of tightly packed debris that it was difficult to comprehend how or why the last few animals had got in and been unable to get out. Other records included one of six shrews caught by a cat during June and July (R.S.) and one of two adults found under an old tyre in Velvet Bottom (A.S.F.).

4. PYGMY SHREW. Seven records were submitted of this, the smallest British mammal, from four different 10 km squares. Five were from bottles, one was caught in a spring-back mouse trap in a conservatory (F.G.H.) and the seventh was found dead on a woodland track (A.D.M.).

BATS. Eight reports were received of bats, only two of which were positively identified. Non-specific records are useful as they do indicate localities in which bats are present. One of the records was of bats seen several times leaving a small hole near the eaves of a bungalow. Contrary to widely held beliefs bats prefer new buildings to dusty, cobwebbed old ones for roosting purposes.

8. GREATER HORSESHOE BAT. Two were seen on several occasions in a small tunnel known to have housed a few bats each summer for several years. One, bearing a ring (numbered R R 3844), was also seen there in 1977 (A.F.J.).

21. LONG EARED BAT. A colony of about 40 has inhabited the roof of a house at Chewton Keynsham every summer since at least 1968 (R.V.H.).

24. FOX. Few people would readily confuse the fox with any other animal. This, allied to its increasing presence in suburban and urban settings, ensure its' continuing status as the most reported local mammal. Some sixty people submitted 172 records, the majority of which were from such settings. Many of the observers have commented on an increasing boldness of these town-dwelling foxes with a noticeable number of day-time observations.

Records from seventeen 10 km squares indicate the widespread distribution throughout the County. Field signs, which are fairly easily recognised by the practised observer, account for many of the rural reports. Day-time sightings would appear to be much commoner within suburban areas.

Five of the fifteen road casualties were seen on approximately two and a half miles of the M32 motorway between Eastville and Hambrook. A fox seen crossing Braemar Avenue, Filton in the early hours of the morning was trailing a string of sausages (Mr C.). A reporter on "Radio Bristol" saw one chased out of a nearby garden and across the road by a black and white cat during the early morning Foxes were seen several times at the edge of a market garden at Portishead (S.S.) where the nurseryman was quoted as having lost several of his "free range" peacocks to them. A five week old cub was found trapped in the end garage of a long row. It had apparently fallen through a hole in the ceiling. There was a well-used entrance through a broken tile into the roof area which covered the whole row. The roof was on the same level as the gardens adjoining the backs of the garages (A.F.J.). A live adult was watched sitting conspicuously in the middle of an arable field apparently listening to hounds hunting another fox (M.B.). A coupled pair were observed on the Downs near The White Tree by several members during the Sectional Fox rally on 29th January. An adult was noticed attempting to cross Southmead Road Filton during the morning rush hour. It was successful when the traffic halted to allow it across (J.W.). The alarm call of a hen alerted the owner at Cromhall (J.H.) who saw a fox in the garden with a chick it had just killed. The animal was reluctant to leave even at the appearance of the owner's sheep dog. It eventually left over the garden gate and made its way up the road.

Families of cubs were reported from 13 sites. Five cubs were present under a large pile of junk and rubbish in St George (S.H.). Whilst an earth with six cubs was found near Green Bank Cemetry (S.H.). A patient looking from a fourth floor window of Bristol Maternity Hospital saw 2 cubs playing on a nearby lawn at 4.30 a.m. (M.T.). A family of four cubs were seen regularly on Eastlands Estate, Thornbury (D.F.), whilst an adult and three cubs were observed playing on a Chipping Sodbury lawn (R.W.). A litter of four were present at Winterbourne Down (A.F.J.). Three litters were located on a large area of waste ground and disused rubbish tips at Filton (A.F.J.). Other reports with unspecified numbers of cubs were from Coombe Dingle (S.H.), Horfield (M.G.), Westbury-on-Trym (S.H.) and Keynsham (P.W.).

27. STOAT. Only three instances of this species were recorded compared to 20 of weasels. One of the weasel reports however referred to a "black tail". As the black-tipped tail of the stoat is its main distinguishing feature then this would appear to be a case of mistaken identity. The other main differences between fully adult animals of these two species is the size - the stoat being the larger of the two. The three positive sightings were from Tortworth (J.H.) Velvet Bottom (A.S.F.) and a small wood near Chew Valley Lake (H.E.R.).

28. WEASEL. All weasel records were for different one km squares, showing a general spread throughout the County. More than half the total were of animals seen crossing roads. On two occasions they were carrying small mammal prey (J.H., P.J.C.). There were two reported road casualties, at Publow (H.R.H.) and near Berkeley (A.F.J.). One was seen playing in and around a garden sand-pit at Portishead (B.S.), whilst two were observed playing by the roadside and "vocalising loudly" (R.J.G.S.). A weasel was also seen "gripping the throat of a fox" (per M B) although the outcome was not stated.

30. MINK. The four sightings of mink included three from the River Avon in the Batheaston area seen at different times by a fisherman (R.P.) with an interesting observation of an adult with two young working along the bank in mid-July. The fourth sighting was at Herriotts Bridge, Chew Valley Lake (R.S.).

POLECAT-FERRET. One found dead at Failand had yellowish-brown fur (J.F.B.). Its head was too squashed to be of any use for confirmation that it was not a polecat. A second one found dead on the road by a visitor (T.E.) at Potters Hill during the joint Bristol Naturalists Society/Mammal Society meeting was proclaimed by Dr Pat Morris to be unnecessary to have a further identification by the British Museum due to its light fur colouration.

31. BADGER. Twenty-one road casualties were reported, bodies being seen in all months except July and December. Eight of the casualties occurred in March. Twenty active setts were noted with cubs observed at five (J.F.B., A.S.F., C.F.H., A.F.J.). Distinctive field signs, including foot prints and latrines, were widely recorded. These two features in particular are readily recognisable with experience. Three different badgers were observed from a stationary vehicle, near a Coombe Dingle cross-roads, between 1.45 a.m. and 2.03 a.m. (A.F.J.). The first one had a short, broad tail, the second a long, thin tail and the third one a very white, long tail. These features were well illuminated by the street lighting. Two foxes were also seen during this time. Two adult badgers were seen taking bread from a bird table at Almondsbury (D.V.S.).

34. GREY SEAL. One seen off Tower Rock, Steep Holm on 26th October - noted in Steep Holm Natural History Report for 1978.

DEER. There are three significant deer parks within, or adjoining, the area. Two are in Northavon, at Badminton and Dyrham, with the third, Whitcliff Park, being just north of the County boundary and part of the Berkeley estate. Badminton has about 60 fallow and 250 red deer, Whitcliffe has 350 fallow and 200 red. The smallest of the three, Dyrham, supports a herd of 70 fallow deer.

42. RED DEER. An unconfirmed sighting was made at Landsdown in April and two hinds obviously escapees from Whitcliff, were seen moving from a wood near Hill (R.A.B.).

44. FALLOW DEER. One was seen feeding in fields with young cattle, near Tortworth several times in January (J.H.) and two were seen at Avening Green on the 12th June (F.M.).

45. ROE DEER. Several records were received from Somerset - south of Frome, (A.D.M.), where there would appear to be thriving populations, and Rowberrow Warren (E.J.L.). Four reports were submitted from within Avon County of sightings of live animals, (R.P., E.J.L., R.W.H.) and a fifth record was of slots in Leigh Woods (A.F.J.).

47. MUNTJAC. A pair were introduced recently onto the island of Steep Holm in the Bristol Channel. One of these was found dead at the foot of the cliffs. A post mortem examination revealed severe injuries consistent with the animal having fallen from a considerable height.

53. BROWN HARE. Most of the sightings of this species were of single animals. The early morning meeting of the Section in May at Hill, near Berkeley, did however see "four fighting and chasing" in open fields (R.A.B.). The two road casualties were on 27th March on the A38 at Whitfield (A.F.J.) and the 30th March on the A46 at Oldfield Gate (M.B.).

55. RABBIT. Widely reported with a distribution from 20 different ten km squares. Records included many sightings of live animals, some road casualties and field evidence from a wide variety of habitats, including pasture and arable field banks and hedges, rough grazing, woodland, railway embankments and overgrown wasteland. The most urban sighting was of a headless corpse found on a bank on the edge of Lakewood Road, near the entrance to Badocks' Wood, Henleaze (J.W.). "Ginger rabbits" were noted on Velvet Bottom Nature Reserve, a rough grassland area on lead-infected soil (A.S.F.). There were numerous adult and young rabbits here despite a severe outbreak of myxomatosis in 1976/77. No reports of this disease were received from Avon County in 1978.

57. GREY SQUIRREL. Not so well-recorded as in previous years, this species was nevertheless seen regularly throughout the year. The incidence of road casualties again showed a peak in late summer although about a month earlier than in 1977 being from mid-July to September when ten of the total of 12 were reported. A tall sapling tree in Midger Wood which had been severely barked by squirrels was seen by the field meeting in July. There were long strips of green bark hanging from the tree. Some of the strips were up to five feet in length and about an inch and a half wide. Three young ones were seen in Eastville Park (C.J.H.). Visiting squirrels in a garden in Keynsham were seen to eat walnuts (P.W.). A large number were present in Brandon Hill in the autumn, where some of the bolder ones will readily take nuts or acorns from the hand - some even perching on one's shoulder to do so (A.F.J.).

59. DORMOUSE. An unconfirmed report of a dormouse being caught by a cat was received from Olveston. All other recordings were of the finding of hazel nut shells nibbled by this small mammal. One such find was in Leigh Woods this being the first record for 10 km square ST57 (A.F.J.).

61. HARVEST MOUSE. Nests were found in six localities (A.F.J.), three of which were previously unknown sites. In five of the localities only single nests were found, but one of the new sites, a rough uncultivated patch of grass, along the

bank of a small brook, contained seven nests all in clumps of *Dactylis* grass. Several sites known to have contained nests in previous years were searched unsuccessfully. It would appear to have been a poor breeding season locally for this species.

62. WOOD MOUSE. Well over half the records obtained were of skulls in bottles (A.F.J.). Some wood mice were seen during cold weather in the loft of a house in Keynsham, which was used as a fruit store. They were found to prefer pears to apples (P.W.). A young one was observed eating trefoil seeds on a lawn at the same address. It was later found dead.

63, YELLOW-NECKED MOUSE. One was caught in a "flap" trap at Wetmoor, a Gloucestershire Trust reserve on which this species has previously been trapped (A.F.J.).

64. HOUSE MOUSE. Again greatly under-recorded. Two positive identifications were of animals trapped in houses with another one being caught by a cat (R.S.). One found in a bag of sheep feed in calf pens at Langford House was observed for some time but it eluded capture (M.J.C.), as did one seen in a top floor office of a Technical College (B.H.). During December "most of Cromhall seemed troubled by house-mice. The school had a heavy infestation and most of the children had stories of mouse damage and invasion at home" (J.H.).

66. COMMON RAT. Another under-recorded species with several road casualties reported. Two were killed at Little Stoke by an Airedale Terrier (A.E.R.) and a Brislington cat caught nine between June and September. These were caught along the edge of a small stream in a built-up area (S.D.S). A body was seen at the entrance to a fox earth at Filton on a disused rubbish tip (A.F.J.). One was seen in Henleaze in broad daylight "during the dustmen's strike" (J.F.B.).

67. BANK VOLE. Remains were found in bottles from thirteen different localities. On three occasions, during Mammal Section Field meetings, bank voles were trapped. Distinctively gnawed hazel nut shells were collected in two different woodland areas.

68. WATER VOLE. Apparently typical evidence, such as holes in the banks and foot prints in the soft mud, were seen along several waterways, but this in itself should not be taken as positive indication of the presence of water voles. Rats often inhabit the same sort of areas and may well take over a water vole system. The footprints of these two species are extremely difficult to differentiate. Thus positive sightings only are used. The size of the animals are similar and the most obvious features of difference are the more rounded face and small ears of the vole together with its shorter tail. Sightings from eight areas were recorded. In April when the foliage along the banks of the River Frome at Winterbourne Down was fairly short several holes were noticed three or four feet from the edge of the bank. The grass around these holes was well grazed. As the herbage grew rapidly the holes were soon obscured. One was caught and taken to a house by a cat at Cromhall (J.H.).

67. FIELD VOLE. Again the most widely recorded of the small mammals due mainly to the ease with which runs can be discovered in rough grassy areas and the incidence of bottle victims. Several nests were found - some by following runs through the grass and more underneath sheets of plywood, metal, asbestos which had been discarded in grassy areas. One such piece of plywood, when lifted, revealed two nests from which ran at least five adult field voles (A.F.J.).

72. COYPU. The most unusual record for 1978 (J.W.) "this animal was on the small bridge over the River Trym, near Falcondale Road and refused to even move when my dog barked at it. It eventually ran between the runners of a man's toboggan and jumped off the bridge into the stream where it sat on the edge, facing us". It must certainly have been an escape from the nearby Wild Life Park. An unconfirmed report was later received of a dead coypu at Avonmouth.

The number of records received for 1978 was pleasing and reflects the continued interest of the Society members in the local mammals. As the more records that are received make the survey more meaningful I would urge that a continued flow be maintained. The survey is carried out on an annual basis thus any recurring occurrence is useful towards forming as complete and accurate an analysis as possible.

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AVON BIRD REPORT, 1978

COMPILED BY THE EDITORIAL COMMITTEE OF THE
B. N. S. ORNITHOLOGICAL SECTION

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THE YEAR February snow in unfamiliar amounts preceded a cool spring, a cool, cloudy summer and a mild, dry autumn.

The generally mild weather of late December 1977 continued into January, with much rain and strong westerly winds, which moved to northerly on the 9th, bringing a much cooler period up to mid-month, with heavy snowfalls in Scotland and N. England. After a short mild interval with S.W. gales the wintry weather returned, with snow on high ground locally. February started with another mild interlude, but from the 8th an anticyclone to the north brought very cold polar air with severe night frosts and more snow, including on the 16th and 18th the most severe snowstorms to visit the S.W. for many years, blocking roads in Avon and Somerset even on the low ground. From the 21st warm air from the west produced a rapid thaw and consequent flooding.

At the New Grounds, Glos, the Bewick's Swan and White-fronted Goose flocks were at moderate levels (380 and 2,300 respectively) as the year began. By early February numbers had fallen to five and 1,000 respectively, but they rose again during the cold spell to 172 and 2,600. Other species appeared to show no extensive weather movements locally, though some effects on the numbers of waterfowl were discernible. The Avon total of Teal was the highest since early 1974; numbers of Shoveler were somewhat above normal, and the Goosander flock at Chew Valley Lake (CVL) reached 66 by Feb. 5th. The large numbers of Ruddy Duck present in late 1977 increased further to 260 in January, but dispersed fairly quickly thereafter.

The two Long-billed Dowitchers that had arrived at Blagdon Reservoir in December 1977 left in mid and late January; these may well have been the single birds seen at Steart, Som., on the 13th and CVL on the 21st. A Waxwing at Filton was the first to be reported in the area since 1971. A Dartford Warbler at Portishead early in March (and one at Steart, Som., in February) were other uncommon visitors probably brought by the cold. As is now usual, Blackcaps and Chiffchaffs were reported throughout the winter.

March was dismal, dominated by wet westerly or northerly winds, which must have delayed summer migrants. From the 9th to the 11th a warm southerly air flow gave a welcome break, with day temperatures notably high. In the first half of April, anticyclones to the north or west produced a cold northerly air flow; there was a severe frost on the night of the 10th-11th. From the 17th to the 22nd the wind moved towards the south but the wet weather continued as a series of fronts maintained cloud cover. On the 23rd and 24th strong easterlies brought warmer air, but by the 26th the cool weather had returned. It persisted through the first week of May, but the anticyclonic weather that succeeded it lasted for the rest of the month, with a fine warm spell from the 26th to June 3rd. The rest of June was cool and changeable. Some notable events were records of a Pomarine Skua early in May and a Dotterel later in the month - the second and third, respectively, of these species to be reported in the area of Avon this century. A Red-necked Phalarope at CVL was another May treat. For the fourth successive year Teal summered, though apparently no attempt at breeding was made. A pair of Ringed Plover bred, and several Little Ringed Plover summered; mating was seen but the outcome is not known.

July was dominated by a series of atlantic depressions, which maintained cool and unsettled weather except for a week from the 10th and a short spell at the end, when thunder was accompanied by some heavy rain. Westerly weather persisted for the first three weeks of August, then turned to northerly; temperatures rose from mid-month. Anticyclones to the S.W. and over Europe gave a fine, warm and dry September, with light S. or E. winds in the south of England, except for unsettled spells from the 5th and on the 30th. During the former strong S.W. winds produced a small "wreck" of Manx Shearwaters. In the north the westerlies continued, with very strong winds from the 21st to 30th. The weather stayed dry and warm in October and for most of November, which was exceptionally mild; the autumn was the driest for over a hundred years.

The westerlies had a number of effects.

- In the north of England there was a large "wreck" of Leach's Petrels, with some Storm Petrels. Birds were spread far and wide; few reached the south-west, but two of each species were seen in Avon, and several Leach's on the Somerset coast.
- The southward passage of Little Stints and Curlew Sandpipers was grounded; large numbers were seen in eastern England, and some substantial parties reached the west country, bringing considerably more than usual to the reservoirs and coast of Avon and Somerset.
- The expected crop of New World waders arrived. In Avon, a Pectoral Sandpiper, a Buff-breasted Sandpiper, two White-rumped Sandpipers and two Grey Phalaropes reached CVL; single birds of the first two species and a Wilson's Phalarope were found in Somerset; a Grey Phalarope at Cheddar Reservoir from Sept. 29 to Oct. 1 may have been one of the birds from CVL.

A Kentish Plover at Chittening in August was the fourth for the county area; the first, in 1947 at Severn Beach, was the only one in spring (there were spring records also from the New Grounds, Glos, in 1960, 1970, 1977 and 1978). The southward passage of Black Terns through the country was, unusually, accompanied by a number of White-winged Black Terns; one of these was found at CVL, as was a second bird which was thought to be possibly a hybrid between that species and Black Tern. Records of one or two Avocets are now annual: for the fourth successive autumn one was noted on the coast; the last spring record was in 1976.

The fine autumn ended abruptly on Nov. 25th; the Atlantic anticyclone moved east to Scandinavia, bringing very cold winds from the north across Britain, with snow in the north and frosty nights in the south. The first week of December featured cool S.E. winds; from the 8th, low pressure over the Atlantic dominated the weather, giving mild, wet westerlies. From the 16th, high pressure over the country brought cold east winds; milder westerly air over the Christmas period was succeeded on the 30th by polar air from the north-east which brought snow, heavy in Scotland, and for some days temperatures were below freezing.

EXOTIC AND HYBRID WATERFOWL Besides the Greylags, Snow Geese, Amercian Wigeon and Green-winged Teal included in the systematic list below, there were the now usual records of hybrid ducks, exotic species and other birds apparently escaped from collections. A list follows, in order of the date of first report:

Scaup	Sea Mills, SGW, Portishead Lake - colour-ringed male, Jan. - May 25 and Dec. 4 - 31.
Red-crested Pochard	Pair, Victoria Park, Bath, Feb. 18.
Wood Duck (Carolina Duck)	St George and Eastville Parks, Bristol - one, March 14 - Dec. 31.
Ruddy Shelduck	Two, CVL, March 19; one, Axe Estuary, March 28.
Flamingo sp.	One, New Passage, April 7.
Bar-headed Goose	One, R. Avon to R. Axe, April 8 - June 14.
Cape Shelduck	One, CVL, April 16.
Pelican sp.	One, CVL, June 19-20.
Pochard x Scaup or Tufted	Female, CVL, June 24-25.
Pochard x Tufted	One, CVL, July 8-22.
Scaup x Tufted	One, CVL, July 22-28.
Chiloe Wigeon	One, CVL, June 24 - Dec. 31 (occasionally at Blagdon Reservoir).
Mandarin Duck	Tame female, Victoria Park, Bath, Nov. 19.

SYSTEMATIC LIST

The following list is based on all Avon records sent to Bristol Naturalists' Society or Bristol Ornithological Club. From the beginning of 1978 the Somerset Ornithological Society ceased to cover the area of south Avon in its annual reports on Somerset Birds. We tender our thanks to all who have submitted records or other data. Contributors are listed at the end of the report; we apologise for any omissions.

The arrangement of species follows that of Prof. Dr. K. H. Voous' recent revision, which is being used in the *Handbook of the Birds of the Western Palaearctic*, and which is recommended by the Report Editors' Standing Committee, *British Birds* and the B. T. O.

Abbreviations: NA denotes the part of Avon formerly in Glos. and SA denotes the remainder. CVL indicates the frequently-mentioned Chew Valley Lake and SGW is used to indicate the Royal Portbury Dock, the remainder of St George's Wharf and Portbury Wharf. ASW indicates Avonmouth Sewage Disposal Works and its surroundings, including Hoar Gout. The notation [BBRC] following a record shows that it has been submitted to and accepted by the *British Birds* Rarities Committee.

GREAT NORTHERN DIVER

SA The two present late in 1977 stayed until Jan. 22; one spent some time at Blagdon res., occasionally rejoining the other at CVL (KJH, GP *et al*.). One in Axe Estuary, Jan. 28 (RA). One at Sand Bay, Dec. 23 (RA).

LITTLE GREBE

NA Spring records from Littleton Pools, where an adult and two young were seen - the only breeding record.

SA Scarce early and late in year - some 20 birds reported - but good numbers following breeding season (50+ at CVL). Eight broods noted at CVL, one at Blagdon Res., one at Portbury Hill and one, SGW.

GREAT CRESTED GREBE

SA Bred at Blagdon Res. (2 broods; 3 young), CVL (32; 57) and at Hunstrete (nest, 2 eggs). Largest numbers in August - September, when total at reservoirs was 325 - 425.

SLAVONIAN GREBE

SA Barrow Gurney Resrs.: one, Jan. 6 (HRHL); one, Oct. 22 to Nov. 20 (JRB, KJH *et al*.). One at CVL, Nov. 8 (GJU).

BLACK-NECKED GREBE

SA CVL: one, April 8-16 (RMC *et al*.); one, Sept. 16-25 (KEV *et al*.).

FULMAR

Reports (52) from Estuary, March 14 - Sept. 11, mostly off Brean Down, involved at least 34 birds; one or two off Steep Holm on five dates, April 29 - Sept. 4 - no evidence of breeding. One at CVL, Aug. 6th. Only NA record: one off Chittening, July 8th.

MANX SHEARWATER

Reports (22) mostly of small numbers, but 195 off Brean Down on June 24, and 73 on 30th. Nine coastal reports during stormy period, Sept. 10-16, after which single birds were found inland at Little Stoke (26th), Bristol City centre (27th) and Bath (29th).

PETREL species

NA One (species not certain) off New Passage, Sept. 10 (PJH).

STORM PETREL

NA Single birds close inshore at Severn Beach on Sept. 16 (JT, RGT) and at New Passage on 30th (RGT).

LEACH'S PETREL

SA One, Axe Estuary, Sept. 28 (RA); one, CVL on 30th (KJH,RJP).

GANNET

SA One or two off Steep Holm, May 1; six coastal records, mainly off Brean Down, June 18 - Oct. 16 (maximum of 12 on Aug. 16).

CORMORANT

NA Up to nine roosting on pilot lights at Oldbury, Feb. to April and in September. Other large coastal counts - 26 off New Passage, Sept. 9; 14 off Chittening, Oct. 16th.

SA Post-breeding flock of 97, Steep Holm, Aug. 3rd. Reservoirs: more than usual at Barrow Gurney (up to 16, January) and Blagdon (11 - 16, end Nov. to mid-Dec.); monthly maximum counts at CVL -

Jan. 60; Feb. 72; Mar. 65; Apr. 25; May 4; June 7
July 16; Aug. 30; Sep. 52; Oct. 35; Nov. 67; Dec. 61

SHAG

SA Many more reports than usual, probably involving nine birds: two, R. Kenn - Clevedon, Jan. 4-12 (BR, AFS) and one dead, March 2 (DB); single birds at Weston Bay, Jan. 4 (RA), Portishead on 15th (TBS) and Blagdon Res. on 30th (KEV). CVL: one (first-winter), Feb. 26 and March 26 (PJC), and one, Dec. 26 (BLK). Adult off Brean Down, July 16 (TSR, TR); one off Sand Point, Sept. 10 (RA).

GREY HERON

Regular at ASW fish lagoons (max., 3 in May) and many records from scattered localities, but breeds only in SA, where 73 occupied nests cf. 78 in 1977: 11 at Newton Park, 15 at Portbury, 35 at Cleeve and 12 + 2 "possible" at Uphill. Largest numbers outside breeding season were at the reservoirs, with up to five at Blagdon in January and 22 at CVL in July and November.

MUTE SWAN

NA Bred in Bristol at Eastville (3 yng) and St George (4 yng) Parks; latter transferred to R. Frome when lake was drained. Herds reported: 29, Bristol Bridge, Feb. 17; 26 there on 23rd.

SA Breeding records from Bath - Kennet & Avon Canal area (six nests, at least 2 broods, one of 6); S. Avon moors (6 nests, at least 3 broods); Blagdon Res. (3 broods; 12 young); CVL (5; 23); and single nests at Wills' lake, Hartcliffe, Bristol (6 yng), Portishead Lake (7 yng), Backwell, Banwell and Hewish. Largest herds: CVL (64 - 105, June - Oct.) and Bucklands Pool, Backwell (17 - 23, April, May, November and December).

BEWICK'S SWAN

NA Two at Chittening, November 29 - the only record.

SA One, Sand Bay, Jan. 14; five, R. Banwell, on 17th; Blagdon Res. - up to 7 in first half Jan. and up to 18, Oct. 22 to Dec. 17; CVL - up to 34 in Jan., five on March 19, and up to 15 from Oct. 23rd. Buckland's Pool, Backwell - three, Oct. 28, two during December and eight flew overhead, Dec. 25th.

GREY GEESE sp.

NA Four flew up-river, Severn Beach, Jan. 9th.

SA Four, CVL, Jan. 8; 17 to E., Weston-s-Mare, Oct. 19; three to W., Dundry, Dec. 10; one with Mallards over Axe Estuary, Dec. 30th.

WHITE-FRONTED GOOSE

NA A juv., Northwick, Dec. 2; 38 to N.E., Sea Mills, Dec. 30th.

SA Six to W., Compton Dando, Nov. 26; three, CVL, Dec. 9; seven to N.N.E., Sand Bay, Dec. 17; four to S., CVL, Dec. 17, and 27 to W.N.W. on 31st; three to E., Clevedon, Dec. 31st.

GREYLAG GOOSE

SA CVL: one, Jan. 8 - Feb. 6; four, July 9 to end of November; three throughout December.

SNOW GOOSE

All the May records below could refer to the same individual.

NA One flying up-river, Chittening, May 20; one, New Passage, Sept. 15th.

SA Single birds, CVL, May 13; SGW on 14th and Sand Bay on 20th.

CANADA GOOSE

NA Three at Latteridge, Aug. 16 - the only record.

SA One on R. Avon, Bath, Aug. 5th. All other records come from CVL: up to 41 to end March; 15 or fewer in April rising to 39 by May 27, including 19 young (3 broods); 50-60, June 25 to end year; these counts include a Cackling Goose, , uo to June 10.

BARNACLE GOOSE

SA CVL: one, Jan. 8 - Feb. 6; three (ringed), March 1 - April 5, then 17 until April 22; eight from Sept. 16 to year end. All are considered to have been feral birds.

BRENT GOOSE

NA Chittening: 38 (dark-bellied) flew S.W., March 12 (HER).

SA One, Axe Estuary, Dec. 12 (BR) - race not ascertained.

SHELDUCK

May population 90-120 in NA and 250-400 in SA; figures imprecise through gap in counts and much variation. Estimate of the young produced: 30 in NA and 120 in SA; first brood seen on May 14 at SGW; last report of small downy young was on July 22 at Sand Bay. Steep Holm: up to nine present, early spring; probably attempted to breed but no young seen (AJP). Reservoirs: at CVL, absent from June 18 to end September; one immature in October; otherwise usually up to eight, but up to 15 in May and 12 in December; at Blagdon, one in February and seven in December.

WIGEON

County total some 550 in January and 850 in February, falling to 350 in March; one still present at Chittening, May 6 and a pair at CVL on 31st. Two males at CVL on July 9, but next record not until Aug. 12 (one), increasing to 55 by Sept. 18th. County total about 100 in mid-October, 270 in November and peak of 400-500 by mid-December. At Northwick, 103 on Dec. 23 - record coastal count.

AMERICAN WIGEON *Anas americana*

SA Adult male, CVL, Dec. 10 to year-end (AHD, KEV *et al*.). [BBRC]

GADWALL

NA Single birds, Tortworth Lake, Jan. 15, Feb. 19; three off Severn Beach, Feb. 18; pair at Littleton Pools, April 15 - May 6, and a male on June 12th.

SA About 90 in county, January - February, increasing to 150 by mid-April. Five pairs held territories at Blagdon Res. in May but the only breeding records were again from CVL - at least 20 broods. Usual large autumn numbers, with 285 in area in early September and 300 at CVL on 18th (PJC); reservoir total fell to 190 in October and to 175 in mid-December.

TEAL

Some 1,500 in county to early February but only 500 by middle of March. A male was at CVL from May 31 to June 15 and a female at SGW on June 13-14; no breeding records. A few arrived in late June; total under 50 in July, but 100 on Aug. 5, then 460 by the 12th and 800 by the 20th. Between 1,650 and 1,800 in county in mid-October, 2,000 a month later and 2,400 on Dec. 16th. The Green-winged Teal, *Anas crecca carolinensis*, present at CVL in late 1977, was last reported on Jan. 26th.

MALLARD

Cover by counts incomplete but data suggest county totals of:

Jan.	1,550	Sept.	2,200	Nov.	2,500
Feb.	1,650	Oct.	3,200	Dec.	2,600

About half the early winter total was at the reservoirs, about 70% there in September to November and 60% in December. Breeding was reported from 24 sites (total of 76 nests and/or broods).

PINTAIL

No records from NA. A count of 29 at CVL on Feb. 27 exceeded the county total on National Wildfowl Count dates early in year. No March or April reports from Blagdon Reservoir, but four at CVL during first half of April - last record, two on 16th. First in autumn were two at CVL on Aug. 12; total 20 by Oct. 15, rising to 58 (15 at Blagdon, 43 at CVL) on Nov. 11; 54 counted, Dec. 16th.

GARGANEY

SA Breeding (highly probable in 1977) was proved with good views on July 15 of an adult with seven young at CVL (RMC, AHD, RM *et al*.). Apart from a male at Blagdon Res. on Sept. 17, all reports (46) were from CVL - up to 19 in August and 34 on Sept. 2, but no more than six thereafter. A remarkably late female seen from Nov. 12 - 18 (KEV) and again on Dec. 7 (GJU).

SHOVELER

NA Thirteen reports from ASW (max. 8 on Feb. 26); nine other reports of up to four birds.

SA Much daily and weekly variation in counts, possibly due to inter-reservoir movements; total probably not over 120 up to early April, and 20-25 by end of month. Up to 17 in May-June, but flock of 30 at CVL on June 17; pair with 8 young there, late July. Area total some 95 in early August but over 300 by 20th; 350 in middle of September, 240 in mid-October, 280 in mid-November and at one time in December over 500 (450 at CVL, Dec. 13 (AM) and 57 at Barrow Gurney Resrs. next day). Species usually infrequent at Barrow Gurney, but 55-58 there, late October to mid-December.

RED-CRESTED POCHARD

SA Male, Bucklands Pool, Backwell, March 19th. Blagdon Res.: a female, April 8; a pair, Oct. 8, two males on 14th and one on 22nd. At CVL male, April 19, May 14, July 22; pair, Aug. 17; male, Aug. 20 - Sept. 25 (with a second on Sept. 2 and another on 20th); two males, Oct. 1 and 2 and one on 8th. Female, Barrow Gurney, Oct.1 to Nov. 25th.

POCHARD

NA Tortworth Lake: four, Feb. 5 and one on 19th; two, March 5; 15, Nov. 19 and 12, Dec. 10th. Single birds at Littleton, March 31 and Dec. 10, and at ASW on Feb. 10, Oct. 25 and Nov. 30th.

SA The low numbers of late 1977 persisted, with a maximum of some 250 at reservoirs, January to March; 13 remained, end April - May. Increase in June, with 150 from end month to early August and 260, Sept. 2, but only 50-100 in mid-September, 175 a month later and 250, mid-November (but 450 at CVL, Nov. 26 - KEV) and 200-400 in mid-December. Up to eight at Bucklands Pool, Backwell, January to March and in December. One coastal record: two, Sand Bay, Dec. 3rd. Bred (one young seen) at CVL.

TUFTED DUCK

NA Up to 54 at Tortworth Lake, January to March; two, Nov. 5; 33 on 19th and 18, Dec. 10th. One, ASW, Jan. 28 and two, May 20th. Up to five, St George Park, Bristol, February, and one, Dec. 10th.

SA Reservoir counts of 475 at Blagdon, Jan. 8 and 560 at CVL on 9th but total at both only 240 on 14th; 125-145, Barrow Gurney, Jan. 21 - Feb. 11th. Some 525 in area, mid-March; 510 at CVL, April 16 (KEV); total, CVL and Blagdon, on 22nd (PJC). At CVL, only 110 by mid-June but 240 on 24th, 585 by July 22 and 650-700, mid-August to early September, falling to 325 by Oct. 16 (when 40 at Blagdon). Total at both resrs. 240 on Nov. 11; about 600 in county, mid-Dec. (435 at CVL). At least 12 broods, CVL and three at Wills' Lake, Hartcliffe, Bristol.

SCAUP

SA Single females, Barrow Gurney Resrs., Jan. 6 and Dec. 14, 15; and at CVL, July 8 - Sept. 10th. Party of seven in Axe Estuary, Nov. 26 (JSR, TR) and an immature male there, Dec. 6,7 (BR).

LONG-TAILED DUCK

SA A very tame bird, SGW - seen on Oct. 27 at 15 ft range (JW).

COMMON SCOTER

NA Male, Northwick Oaze, July 1-7 and two fem./imm., 8th-12th.

SA At CVL: two males, March 3 and one, April 1, 16th and May 31; four (1 male), Aug. 5; a male, Aug. 19th. Flock of 40 to N. off Sand Point, April 16 (TBS); eleven other coastal reports of up to four birds, March 23 - Oct. 17th.

GOLDENEYE

NA One at ASW on December 2nd.

SA Some 35 in area, mid January and 45 by end of month; 68 from mid- Feb. to early March and 40-45 in April; still nine at CVL on 30th. First autumn record very early - one at CVL, Sept. 2; next was one there, Oct. 1; by Oct. 29, total at Blagdon and CVL was 20; area total 26 in mid-Nov., 30-35 by end of month and 40, mid-Dec. One coastal record - female or immature, SGW, Jan. 15th.

SMEW

SA CVL: two females, Jan. 1 - April 16 and one to 30th; a female, Dec. 9-31 and an adult male, Dec. 23-27th. Blagdon Res.: a male, Jan. 8 and on 30th, and again, March 5-25, and a female, perhaps one of the birds at CVL, on Jan. 14-15 and on 30th.

RED-BREASTED MERGANSER

SA The female that arrived at CVL in November 1977 stayed until March 4 (PJC, SBE, GP et al.); two there, Nov. 18 (KEV).

GOOSANDER

NA A male off Severn Beach, Dec. 24 (BL).

SA Early in year most were at CVL - many counts of 30-50 and peaks of 57 on Jan. 9 (KEV) and 66 on Feb. 5 (SBE); 49 still there on March 11 (RMC) and up to eight in April with six still present on 17th (RMC). Elsewhere, two at Blagdon Res., Jan. 2-5; one at Barrow Gurney Resrs., Jan. 22, and a pair on Feb. 18; a male, SGW on March 11 and a 'brownhead' on R. Avon at Saltford on 30th. Fewer in autumn - one at CVL, Oct. 22, up to eight by Nov. 29 and max. of 13 in December (on 16th, when 12-18 at CVL). One on coast, Clevedon - R. Yeo, on Dec. 3 and 24th.

RUDDY DUCK

SA County total some 260 early in January (200 at CVL on 8th), surpassing the high figures of late 1977, but fell to 200 by the 14th, to 85 by Feb. 5 and 40 by end of March; only three or four present in May. A pair spent June and July at CVL, but no proof of breeding. County total seven in September; increase late in October to 205 on Nov. 1 (DL) and a record 305 on 4th (106 at Blagdon - KEV; 219 at CVL - PJC); still 300 present on Dec. 26 (44 at Blagdon - BLK; 260 at CVL - JSR, RGT).

RED KITE

SA One over Clevedon, Dec. 31 (SBE).

MARSH HARRIER

SA One, St George's Wharf, April 27 (JRB).

HEN HARRIER

SA Single female or immature birds in Axe Estuary/Uphill area, March 5-18 and May 6 (RA, BR, JW).

SPARROWHAWK

Numerous breeding-season records throughout county, but few from Cotswolds; several within Bristol, especially from Henleaze, Redland and Clifton - evidence of nesting at Clifton and Stoke Bishop. Elsewhere breeding proved in only two 10-km squares - ST36 and ST56. Many records out of breeding season.

BUZZARD

NA Three pairs along Avon - Glos border; two nests located. One soaring over Stoke Bishop, Bristol, June 18 and three on a date in September.

SA Records suggest a minimum of 16 breeding pairs; proof of breeding in 10-km squares ST56 and ST57.

OSPREY

SA Single birds noted at Blagdon Reservoir, April 7-8 (WED, KEV) and May 10 (AT), and at CVL on April 8-9 (presumed to be the bird from Blagdon) and on 17th (several observers).

KESTREL

Many reports, covering all months, throughout county; 22 nest sites found, in nine 10-km squares: ST35, 36, 45, 46, 57, 58, 66, 68. At least 13 and possibly 19 breeding territories within City of Bristol (eight nests found).

MERLIN

NA A female, Chittening Warth, Nov. 25-26 (KJH, BL, RGT).

SA Single birds, Clevedon - R. Yeo, Jan. 17 and 29 (HRHL,GSu) and Oct. 8 (HER); near Bath, April 17 (JTE) and Walton Moor, Nov. 6 (RB). Other records (Feb. and Dec.) lacked observers' names.

HOBBY

NA One, Severn Beach, June 4; one at a Cotswold locality, July.

SA Several records from CVL area, June 29 to mid-Sept., and single birds noted in three other areas in breeding season, as well as near Nailsea on April 29 and at Blagdon, Dundry and Whitchurch between Sept. 17 and 24th.

PEREGRINE

Records are of single birds unless otherwise stated.

NA Severn Beach, Sept. 10 (ARL) and 30th (PJC); Chittening, Nov. 10 (GY).

SA CVL: imm., Jan. 26-29; imm., April 1 (KEV, who saw it earlier same day at Blagdon Res.); imm. male, Nov. 26 to year-end (many observers). Sand Bay area, March 11 (TBS), Sept. 8 (RA) and Oct. 8 (TBS). Steep Holm: Aug. 16, and two frequently later in month (AJP). SGW: imm., Sept. 30 (GJU). Clevedon - R. Yeo: Oct. 21 (TM), Nov. 10 (JHo) and Dec. 24 (DB). Axe Estuary, Nov. 18 (BR).

RED-LEGGED PARTRIDGE

NA Single birds at Marshfield, June 20 and Shirehampton, Bristol on Oct. 4th.

SA Nest (one egg), Stanton Prior, June 23 (PGF). Coveys at Marksbury (7 on Feb. 11 and 6 on Oct. 29); Englishcombe (13 on Nov. 4) and Keynsham Manor (16 on Dec. 26).

GREY PARTRIDGE

NA Pairs noted in breeding season at Aust, Hawkesbury Upton and West Littleton. Coveys seen at Lower Morton (Thornbury) and Over.

SA Widespread reports, covering all months, generally of single birds or pairs, but coveys were seen at Saltford (8 birds), Stanton Prior (5), Englishcombe (11), Marksbury (19) and Norton Malreward (8). Nest with 12 broken eggs, Stanton Prior.

QUAIL

No records received.

WATER RAIL

Reports (44) from Lawrence Weston, NA; and Abbots Leigh, Sand Bay and CVL, SA, Jan. 8 - May 26 and Sept. 14 to end of year.

CORNCRAKE

SA One killed by dog on farm at Flax Bourton, early June (EH).

MOORHEN

Widely distributed; present on all suitable waters. Largest count reported was some 50 at CVL on Sept. 16 (KEV).

COOT

NA Breeding season reports from Littleton on Severn, Wickwar, Dodington Park and Bitton. Up to 84 at Tortworth Lake in winter.

SA Breeding reports mainly from reservoirs, but also from SGW, Portishead and the lakes at Newton Park and Hunstrete, Monthly peak counts from Blagdon Reservoir and CVL were as follows.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
BL	65		370						1115			95
CVL	430	676	590		410	755	1020	1345	1360	634	475	500

OYSTERCATCHER

NA Chittening: up to five, January to May 28, and up to four, June 30 to year-end. One, Oldbury on Severn, November 5th.

SA SGW: present, March 12 - Sept. 26; usually under five but 15 on Aug 8, and 24 on Sept. 6; one pair bred. Clevedon to R. Yeo: present all year, with peak (13) in April. Sand Bay: noted up to May 19 (max. 73) and from July 2 (max. 57). Axe Estuary: noted to April 21 (max. 95) and from Aug. 4 (max. 165). Inland records from CVL (one, Jan. to May 13, but eight on April 16, and up to four, July 13 to Oct. 1); Blagdon Res. (one, March 11) and one at Bucklands Pool, Backwell, March and April.

AVOCET

SA One at SGW, Sept. 23 - Oct. 6 (JRB, WGB, GJU). One at Axe Estuary, December 30 (TRJW).

LITTLE RINGED PLOVER

SA Up to four at SGW from April to Aug. 27; display and mating seen, but no proof of breeding (WGB, NAL, TBS, GJU). Two seen at Shockerwick on May 1 only (RMC). CVL: passage, mainly of immature birds, July 15 - Oct. 8; generally up to six noted, but nine there on Aug. 20 (many observers).

RINGED PLOVER

Bred at SGW (SA) where two chicks seen. The table shows peak monthly counts in main areas: Oldbury Power Station, Severn Beach to Chittening, SGW, Clevedon to R. Yeo, Sand Bay. Axe Estuary and CVL. The only other records of over six birds were of 100 at Sheperdine, Sept. 17, and 30 there on Oct. 15th.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
OPS		10		5		6		100	130		50	
SB/C	50	40	15	73	300	40	24	563	240	58	41	47
SGW	6	13	2	2	2		6					10
C/RY		8	1	4	20		6	220	20	4		2
SBay	27	25			53			175	185	37	50	50
Axe	21	15						120	130	150	48	48
CVL					1		1	21	27	3	1	

KENTISH PLOVER

NA One, Chittening, Aug. 11 (GY).

DOTTEREL

SA One, St George's Wharf, May 21 (WGB).

GOLDEN PLOVER

NA Westerleigh Common: 200, Feb. 2nd. One, Aust, Oct. 14 and one (perhaps the same) at Severn Beach next day.

SA Recorded up to May 8 and from July 25 onwards. Counts of 100 or more: Marksbury (123, Jan.), CVL (100, Dec.), Nailsea Moor (125, Jan.), Kenn Moor (1,200, Jan.; 250, Feb. and Nov.; 200, Dec.), Clevedon to R. Yeo (300, Jan.; 100, Feb. and Oct.; 250, Nov. and 140, Dec.), and Axe Estuary (100, December).

GREY PLOVER

A return to the low numbers of 1974-5, with all counts under 10.

NA Sheperdine: nine, Oct. 8. Northwick: two, July 16 and one, Sept. 30. Severn Beach - Chittening: six, Jan. 22; one, April 22; eight, May 1; up to six in October and one on Dec. 2nd.

SA SGW: two, May 7; three, Sept. 27; one, Oct. 20th. Clevedon to R. Yeo: one, April 24; two, May 3; up to four, Aug. 29 - Dec. 12th. Sand Bay: one, July 1 and one, Oct. 29th. Axe Estuary: one, October. CVL: up to five, Dec. 9 - 31st.

LAPWING

NA Breeding proved at Avonmouth (2 pairs) and Bagstone nr Rangeworthy, where c. 1,100 present in January. Northwick: 500 in February; 150, July 9, rising to 400 by 26th, to 750 by Aug. 7 and to 1,000 from Aug. 24 to Sept. 3; then 500 or less to end of year. R. Avon (Sea Mills): 150-160, August and September.

SA Breeding proved at Queen Charlton (3 pairs), Ashton Vale, SGW (six pairs), Nailsea and Kenn Moors, and Clevedon to R. Yeo. In first winter period flocks of 500 or more were noted at CVL (750, Jan.), Clevedon - R. Yeo (800, Jan. and 500, Feb.), Weston Airport (1,500, Jan.) and St George's, W-s-M (1,500, Feb.). Autumn flocks were recorded from July 9; peak counts from then onwards:

	July	Aug.	Sept.	Oct.	Nov.	Dec.
Blagdon Res.		100	750			
CVL	300	1350	400	200	2000	2300
Clevedon - Yeo	320	750	350	260	450	1500
Axe Estuary		750	2000	1050	1000	1190

KNOT

Very small numbers. The only winter records were of one, Axe Estuary, Feb. 11; three, Sand Bay, Dec. 3; and one, SGW, Dec. 11th. Small spring passage noted at Severn Beach, April 30 - May 27, with peak of 14 on May 23, otherwise up to six; also one, Axe Estuary, May 8th. Autumn passage, Aug. 1 - Oct. 29, with peak counts in NA of 31 at Northwick and 40 at Severn Beach on Sept. 2, and eleven at Sheperdine on 19th; and in SA of 15, Clevedon - R. Yeo, Aug. 29, and 35 at Sand Bay on Aug. 30 and 60 there on Sept. 20th.

SANDERLING

NA Noted only at Severn Beach. Spring passage, April 20 - June 2 with usually under nine but up to 23, May 5 - 23rd; in autumn, up to three on passage, July 18 - Sept. 16th.

SA Recorded at Sand Bay and Axe Estuary, April 23 - May 24 (max. of 15) and Aug. 5 - Sept. 21 (max. six).

LITTLE STINT

NA Reported only from Severn Beach: one. May 30 (RGT); one, Sept. 9 (NTL, RNS) and two, Sept. 16 (RGT).

SA On coast recorded only between Sept. 4 and Oct. 21: one, SGW, Oct. 1 (AH); six, Clevedon, Sept. 17 (TBS); up to five at Sand Bay and one or two at Axe Estuary (RA, BR). Reservoirs: one, Blagdon, Jan. 4-14 (TAB, AHD, KEV); autumn passage at CVL, July 26 - Nov. 11, usually up to three birds but 10-18 on four September dates; two wintering birds, CVL, Dec. 26 and 30th (KEV); one, Barrow Gurney, Oct. 31 (NAL).

WHITE-RUMPED SANDPIPER

SA Two (immature?) of this vagrant from North America were present at CVL on Oct. 27/28, then one until Nov. 2 (AHD, KEV _et al_.).

PECTORAL SANDPIPER

SA One present at CVL, Sept. 20-26 (PJC, GSP _et al_.).

CURLEW SANDPIPER

NA Severn Beach: one, May 9 and 13th and a different one on 27th (BL, NTL, RGT) - first spring record for locality; up to five, Aug. 30 - Sept. 16, with 14 on Sept. 3-4 (PJC, BL, NTL, RGT); one, Dec, 20 (HRHL) - first wintering record for locality. Three at Oldbury Power Station, Sept. 23 (JDRV).

SA Ten coastal records of up to six, SGW to Sand Bay, Aug. 29 to

Oct. 6 (RA, NAL, GWR, GJU); one-two, Axe Estuary, Aug. 24 - Sept 9 (RA, CFD). CVL: up to eight noted on 16 dates, Aug. 20 -Oct. 15th.

PURPLE SANDPIPER

NA Severn Beach: one or two, January to April 1, then eleven on 7th and up to five from 15th to May 13; present again (up to three) from Dec. 1 (a late arrival date). No other reports.

SA Sand Point: one, Jan. 28; one, Feb. 10; two, March 4th. One at Knightstone, Weston-s-Mare, Feb. 18th.

DUNLIN

The table gives monthly maximum counts in main areas: Oldbury to Littleton, Severn Beach to Chittening, SGW, Clevedon to R. Yeo, Sand Bay, Axe Estuary and CVL. The only other reports of large flocks were of 600 in Jan. and 1,000 in Feb. on Kenn Moor.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
O/L	500	540										
SB/C	3500	3000	4500	400	1250	10	180	530	200	82	120	2500
SGW	300	650	800	92	20		60		15	30	450	1500
C/RY	4000	3000	3000	120	180	4	110	400	150	2000	3500	1750
SBay	2500	2500			200		60	250	300	480	1500	2000
Axe	550	2000	1000					200	20	200	1000	3000
CVL	25	2		5	7		8	32	26	40	250	360

BUFF-BREASTED SANDPIPER

SA One of this vagrant from N. America, CVL, Oct. 14 and 15th (AHD). Eighth record for Avon (first was in 1973). [BBRC]

RUFF

NA Recorded only at Northwick: one, Aug. 27 and two, Sept. 3 (RGT).

SA Coast: single birds at Sand Bay, Aug. 18 (RA); Axe Estuary, Sept. 22 (BR) and SGW, Nov. 26 (GJU). Reservoirs: at Blagdon, one onJan. 30, fifteen on Feb. 5 and thirteen, Dec. 16; at CVL, noted up to Feb. 25 (max., ten) and from July 22 onwards (one in July, then monthly maxima of 27, 12, 10, 4 and 22 (many observers).

JACK SNIPE

NA Up to three, Aust to Chittening, January to March 18 and from Oct. 22 onwards. One at ASW, Dec. 14th.

SA Coast:at SGW, nine on Jan. 27, otherwise one or two to April 24 and in November and December; at Sand Bay, up to six in January, up to nine in February, one or two in March and single birds on

Sept. 4, Nov. 11 and Dec. 2nd. Inland: two, Hengrove Park, Bristol on Feb. 19; single birds, Ashton Vale, Feb. 13 and 20th; up to four at Blagdon Reservoir in January; at CVL, one on Oct. 10, four on Oct. 24 and one on Dec. 31st.

SNIPE

No proof of breeding.

NA Noted up to April 17 and from July 26, mainly along coast; only report of over ten was of 47 at ASW on March 5th. One seen feeding on snow-covered road, Easter Compton, Feb. 20th.

SA Coastal records up to April 16 (max., 160, Clevedon - R. Yeo in January and 50, SGW in February) and from July 23 onwards (max. 35). Inland: display seen at Ashton Vale, Bristol in April and May; otherwise noted up to April (max. ten) and from July 22 on (mostly 22 or fewer, but 44 on Nailsea and Kenn Moors, Nov. 21, and counts of 100-255 at CVL at CVL and Blagdon Reservoir, Oct. 8 to Nov. 26, and 35 at latter in December).

LONG-BILLED DOWITCHER

SA The two birds present at Blagdon Reservoir in December 1977 stayed until Jan. 11 and one until the 15th. One, doubtless from Blagdon, was seen at CVL on Jan. 21st (8 observers).

WOODCOCK

NA Small numbers at Roundhouse Wood and Ash Grove, Hill, during the 1977/78 winter (per JDRV); one, Tytherington, November (per NB).

SA Recorded in January and February at Abbots Leigh (up to four) and at Brockley Combe in January (one). Single birds at Blagdon Reservoir and at CVL in December.

BLACK-TAILED GODWIT

NA Seven, Chittening, April 22; up to four on coast, July 14 to Sept. 23; six, Littleton on Severn, Dec. 1st.

SA Spring: one or two noted, April 10 - May 21, at SGW and Clevedon to R. Yeo. Autumn: up to four at these localities and in Sand Bay, Aug. 5 - Nov. 18, but 13 at latter, Oct. 6 (WGB); at Axe Estuary, up to 19 in October and November and one, early Dec. (RA, BR et al.); at Blagdon Reservoir and CVL, one or two noted on 23 dates between August 6 and December 3rd.

BAR-TAILED GODWIT

NA Reported only Severn Beach to Chittening, where noted on 13 dates from April 22 to Sept. 22, covering each month, with maximum of eight on April 30; also one on Dec. 10 and one on 16th.

SA One, Axe Estuary, Feb. 11 (RA). Spring passage: noted from April 13 to May 22 at SGW and Clevedon to Axe Estuary, with up to seven on ten dates and 24-40 on four dates; also one at CVL, May 20 (AHD). Autumn passage noted on coast, Aug. 21 to Oct. 8, with one or two on four dates and five or six on four dates. At CVL, one, Aug. 28 (RJP) and two, Sept. 15 (JS, TR).

WHIMBREL

NA Northwick to Chittening: one, April 22, thirteen on 24th and two, May 6; up to five on five dates, July 22 - Aug. 20. One flew over Redland, Bristol at 01.00 hrs., Aug. 1 (AM).

SA Spring passage noted, April 16 - May 20; highest counts were 40 (four flocks) in April, 100 on May 3 and 80 on 6th. One, SGW, June 25th. Autumn passage, July 9 - Sept. 21 - no count exceeded ten. The only inland records were from CVL: one, May 20 (AHD); one, Aug. 28 (RJP) and two, Sept. 15 (TR, JS).

CURLEW

The table shows the peak monthly counts from the main areas: Severn Beach to Chittening, R. Avon (Sea Mills), SGW, Clevedon to R. Yeo, Sand Bay, Axe Estuary, Chew Valley Lake.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SB/C	76	62	102	2	4	60	100	126	110	140	132	67
Avon	37	32	32	8	Nil	Nil	Nil	Nil		4	28	28
SGW	61	18	62	15	16		36	28	6	23	7	6
C/RY	140	22	9	3	1	6	100	120	60	30	70	7
SBay	150	143	78	46	15	30	120	140	170	110	125	108
Axe	80	100								50	100	70
CVL			2			2	1	4	2	1	1	2

SPOTTED REDSHANK

NA One, Northwick, Sept. 3 (RGT) - the only record received.

SA Coast: single birds at SGW, Feb. 12, May 13, Aug. 27-Sept. 17; at Sand Bay, Sept. 8 and Axe Estuary on 12th. Reservoirs: present at CVL, July 29 - Nov. 18; maxima of six in August, 29 in September, 20 in October and eight, November; one - two at Blagdon, Sept. 16 - Nov. 3, but nine on Oct. 1st.

REDSHANK

Bred at SGW and probably at Kenn Moor, Nailsea Moor and on coast from Clevedon to R. Yeo. The table on the next page shows peak monthly counts in main areas: Oldbury to Littleton, Severn Beach to Chittening, R. Avon (Sea Mills), SGW, Clevedon to R. Yeo, Sand Bay, Axe Estuary and Chew Valley Lake.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
O/L	45	16	8									
SB/C	250	200	132	37	4	3	250	420	250	180	160	200
Avon	80	45	40	2				1	105	124	100	66
SGW	45	52	175	81	9	60	140	90	170	80	100	85
C/RY	70	25	150	25	24	45	45	200	230	110	90	60
SBay	95	48	20	1			100	40		125	111	80
Axe	55	60		30				30		50	150	100
CVL							4	2	2	3	1	1

GREENSHANK

NA No spring records. Oldbury on Severn: three, Sept. 23 and one, Oct. 1; Severn Beach: one, July 16, four, Sept. 17 and one, Oct. 28-29; ASW: single birds, July 24 and on six September dates.

SA Spring records only from coast: one or two, April 24 to May 19th. Autumn coastal records, July 7 - Oct. 5, of up to three in July and August then up to five (but seven at SGW on July 7). Inland records all from reservoirs: one, Blagdon, Aug. 13; noted at CVL, July 9 - Oct. 29, with monthly peaks of two, 21, 27 and six; also one there on Dec. 10th.

GREEN SANDPIPER

NA ASW: up to three, January to April, up to six, July 24 to September, then one or two to end of year. Littleton on Severn: single birds on five dates, July 27 - Aug. 31, and two on Aug. 9th.

SA Coastal records in every month except May, usually of up to four, but more at SGW: up to eight in March, seven in April, 18 in July and six, August and September. Inland: single birds at CVL on Jan. 14, March 3 and April 22; present again there from July 8, with monthly maxima of 15, 15, 10, five, nine and seven; single birds, Abbots Leigh, July 21 and 29th; up to three, Blagdon Res., Aug. 27 - Nov. 4, and at Barrow Gurney Resrs., Oct. 8 - Dec. 9th.

WOOD SANDPIPER

NA One record - a single bird at Chittening, Oct. 15 (BL).

SA CVL: noted from July 16 to Oct. 10, mostly one or two birds but up to six in September. No other records.

COMMON SANDPIPER

NA Winter: one, R. Avon (Sea Mills), January - March, and one or two (rarely three) there and at ASW, November and December. Spring passage, April - May: one, Chittening, April 21; up to eight at Sea Mills, one or two at ASW, three at Keynsham and five in Bath. Autumn passage, July - October: mostly up to three, but up to seven in July (at Chittening) and twelve in August (at Sea Mills).

SA Winter: one or two, Clevedon - R. Yeo, January and February. Spring passage: one or two, latter area; up to five, SGW; up to ten, CVL. Autumn: maxima on coast of 17, July and August, and six in September; at CVL, present July 9 - Oct. 13, with monthly maxima of 24, 51, nine and three; up to three, Barrow Gurney Resrs., Oct.

TURNSTONE

NA Numerous only at Severn Beach: up to 134, Jan. - March; peak on spring passage: 216, April 15-16 and 274, May 8; up to 31, May 19 - July 23; autumn passage peak, 160-200, Aug. 26 - Sept. 1; up to 120 thereafter, except for 161 on Oct. 7th. Counts of 42 at Sheperdine, Sept. 17 and six at Oldbury on 23rd.

RED-NECKED PHALAROPE

SA A male was present at CVL on May 28 (DW).

GREY PHALAROPE

SA CVL: one present, Sept. 26 - Oct. 1, and two on Sept. 29 (RA, DL *et al*.). One, Barrow Gurney Reservoirs, Dec. 26 (KJH).

POMARINE SKUA

SA A light-phase bird off Brean Down, May 7, was moving into Avon waters. Second record in Avon county area since 1900 of this storm vagrant (one was found freshly dead nr. Clevedon, Nov. 1963).

ARCTIC SKUA

NA Severn Beach: one (dark phase) May 6 (RGT); an immature, Sept. 9-10 (HRHL, BL, NTL) and two (dark phase), Sept. 16 (BL).

SA A few off Brean Down presumably passed into Avon waters: two, April 22; single birds on 26th, 27th and May 12; two, June 2, and five, July 3 (BR). One flew up-channel off Sand Point, June 25 (RA, BR). Three pale phase birds, CVL, Sept. 16 (KEV).

GREAT SKUA

SA Birds entering or leaving Avon waters off Brean Down: singles, May 6, July 3, Sept. 10 and 29th, and two, Aug. 16 (BR). One off Steep Holm, Aug. 23 (AJP); one off Clevedon, Sept. 10 (HER) and one off Sand Point on 26th (JW).

GULLS

Monthly counts at all major rubbish tips in Avon, made by GMS, gave the following winter and summer maxima:

	Jan	Aug	Dec
Black-headed	1190	98	2721
Lesser Black-backed	89	252	259
Great Black-backed	4	1	4
Herring	1301	1582	1950

MEDITERRANEAN GULL

SA The adult roosting at CVL in Dec. 1977 was seen again on Jan. 1, Feb. 6 and March 2 (KJH, KEV). An adult at Barrow Gurney Resrs. on Jan. 25 left in direction of Blagdon and may have been same one. (KEV). A first-winter bird, CVL, Oct. 26 (GJU) and Dec. 9 (KEV), and an adult there, Dec. 3 (GP, KEV) and 10th (KEV).

LITTLE GULL

SA Again a notable increase in spring records, starting at resrs. with single adults at Barrow Gurney and CVL on March 30 and on April 1st. Then, at CVL, eight (3 imm.), April 16, three on May 2 and one on 13th; on coast, at SGW an immature bird, May 1, up to four from 6th-22nd and an adult on 8th, and at Weston Bay three birds on May 7th. In autumn only at CVL, with up to three immatures, Aug. 11 - Oct. 1 and a near-adult on Dec. 14th.

BLACK-HEADED GULL

NA Large flocks on Durdham Down, Bristol in midwinter -2,000 on Jan. 1 (PJC). Severn Beach - Chittening: 160, early July, rising to peak of 3,500 on 18th but only 850 on 29th; up to 2,000 in August then 1,000 to end of year. Adult on nest on flooded pasture, ASW, May 23; apparently no eggs laid, and nest deserted a few days later (BG). Some 500 feeding on adult craneflies on grassland at Oldbury on Severn, late p.m., Sept. 19, prior to roosting on R. Severn (JDRV).

SA Roost at SGW held 150 in late June but 1,500 on 22nd - exceptional for season and perhaps associated with very high tide; 450, including first two juveniles of year, July 2; July peak of 2,500 on 19th; some 5,000 in August then up to 2,000 to year-end - notably fewer than in 1977 (TBS, GJU). Usually 100-400, Clevedon - R. Yeo, but 1,000 on June 8 (HER). At Sand Bay, peaks of 340 in June and 800, late July; in Weston Bay and Axe Estuary, 1,500 in February, 1,300 in August and 5,000 in December. At CVL only 400 left at roost by April 2nd, only 150 - all immature - on 30th and 13 on May 27; increase to 200, early July and 1,500, early August; rough estimate of 20,000 present in November (KEV). Albino noted, CVL, Feb. 26 (KEV) and partial albinos at SGW, June 2 (AH) and in NA at New Passage on Oct. 29 (KH, BL, NTL).

COMMON GULL

NA In Severn Beach - Chittening area, up to 23 in late March and April and 17 immatures remained on May 7; otherwise up to ten in autumn and winter. At ASW, up to five in February, and single birds in August and October. Large flocks near Thornbury, March 27, were probably gathering to migrate. Up to 400 on plough in Tormarton - Acton Turville area, September and October.

SA Coast: max. at Axe Estuary - 100, February and 350, December; and at Sand Bay, 20, Feb. 12, 30+ in July and 300, end year; one, immature, Portishead, July. CVL: 500 at roost, April 2, but only four, May 27; first juvenile of year, July 9, then three, Aug, 12; rough estimate of 10,000 in November (KEV).

LESSER BLACK-BACKED GULL

NA No estimates of roof-top nesting pairs in Bristol; only note received was of a suspected nest in Orchard St (APR). At Severn Beach - Chittening and ASW, up to four most months but up to ten at latter in February, when 12 at Westerleigh Common and 21 on Bury Hill rubbish tip (also 21 at latter in November). Five of Scandinavian race fuscus, Littleton on Severn, March 31 (JDRV). 42 at sewage outfall, Avon Gorge, April 20. Total of 65 in three parties, Tormarton - Dunkirk, early September, may indicate movement.

SA No data on Steep Holm breeding colony. At least one pair bred on Denny I., CVL - pair with three almost full-grown young seen, Aug. 5 (KEV). At CVL roost, 500+ in January, 20 in early July and 125 on 26th, and 1,100+ in November (KEV); a possible LBB-Herring Gull hybrid was seen there on Feb. 7 (KEV). One of the race fuscus was noted in Cumberland Basin, Bristol on March 17 (TBS).

HERRING GULL

NA No estimates of roof-top nesting; only report was of a nest on a chimney stack in Cumberland Rd, Bristol - site used for some years. Up to 20 at ASW most of year, but 71 noted in February.

SA At least two pairs nested on cliff, Church Hill, Clevedon (JFB) - a site used previously. Up to 30 hawking insects over fields at

Saltford, March 21 (JWD). At CVL roost, 300 on April 2 (KEV). A very pale Herring Gull seen on Axe Estuary looked distinctly like a Glaucous or Iceland Gull when seen in flight (BR).

GLAUCOUS GULL

SA A first-winter bird was at the CVL roost on Jan. 30 (KEV).

GLAUCOUS or ICELAND GULL

NA An immature bird of one or other species, R. Avon (Sea Mills) June 2 (HER).

GREAT BLACK-BACKED GULL

NA Very small numbers along coast and at Sea Mills in most months, with maximum counts of six.

SA Small numbers at reservoirs and on coast. At SGW, about ten in most months but up to 41 in July (TBS, GJU). No data on Steep Holm breeding colony.

KITTIWAKE

NA Some 100 flying to and fro near Severn Bridge in gale, Nov. 15.

SA Birds noted off Sand Point or entering Avon waters off Brean Down included 130 on March 14 and 305 on 23rd, parties on nine May dates (max., 166 on 12th) and a few groups of up to six at mid-year. One juv., Clevedon, May 7 and June 11. At CVL, one, April 1 and four on 16th, single immatures occasionally in September and October, and an adult on Dec. 31st.

SANDWICH TERN

NA Two flew up-river at Severn Beach, Aug. 1 (RGT, BL).

SA Birds seen off Portishead, Sand Point or (entering Avon) off Brean Down: one, April 18; three, May 13; one, July 3 and two, Aug. 19 (BR, TBS). At CVL, two - three, Sept. 15-17, and six or seven between Sept. 21 and 25th (PJC, KEV, DW *et al.*).

COMMON TERN and ARCTIC TERN

Spring passage, coast and reservoirs, April 17 to May 31; max. count was 45 passing Brean Down, May 6; few records from NA (max. of nine off Severn Beach, May 31); up to six noted at CVL. Small autumn passage, June 30 - Sept. 30, noted mainly at CVL, where up to five often reported and seven (all Arctic) on Sept. 19; one at Blagdon Res., July 25; few noted on coast - occasional single birds near Severn Beach, and up to four on three dates in Axe Estuary; a dead Arctic, Yeo Estuary, Sept. 24. Both species noted on each passage.

LITTLE TERN

Spring: in NA, one, Severn Beach, April 27 and one, May 8 (BL, RGT); one, New Passage, May 1-2 (RNS, RGT); in SA, two at Sand Point, June 3 (TBS). Autumn: no records from NA; at CVL, one, July 24 and six on 30th, one on Aug. 2 and one on 10th (PJC, AM, JSR, JTR); one at Sand Point, Sept. 27 (RA).

BLACK TERN

Small spring passage, April 22 - June 5: in NA, up to nine at Aust, Severn Beach and ASW; in SA noted only on coast passing Brean Down (12, April 27 and two, May 9); inland, one at Bucklands Pool, Backwell, May 9, and at CVL up to four, April 22-30 and two, June 5. Autumn passage July 29 - Oct. 3: at CVL, up to ten until Aug. 13, then up to five, but with 36 on Aug. 2, up to 150 on 19th - 22nd and 12-15, Sept. 9-11; at Barrow Gurney Resrs., one, Aug. 11 and four, Sept. 8; at Axe Estuary, nine flew SW, Sept. 7th.

WHITE-WINGED BLACK TERN

SA A juvenile, CVL, Sept. 9-17 (KEV, AHD, GJU *et al*.). [BBRC]

GUILLEMOT

NA One flying down-river off Severn Beach, July 1 (BL).
SA One dead on beach, Portishead, Dec, 17 (TBS).

RAZORBILL

SA One dead (oiled) on tide-line, Weston-s-Mare, March 25 (RA).

STOCK DOVE

Breeding-season reports from 17 localities (3 in NA); six nests on Steep Holm, two pairs rearing young in barracks buildings (AJP). Flocks reported included 80, Blagdon Res., Jan. 20; 60, SGW, Aug. 29; 100, CVL, Dec. 10 and 100, Chittening, Dec. 23rd.

TURTLE DOVE

NA Noted, April 29 - July 21 at Cromhall, Tytherington, Inglestone Common, Alveston, Chittening, Stoke Park and Oakford.
SA Reports (40) of up to seven, April 22 - Aug. 20, from 18 areas.

CUCKOO

Reports (103, of which 11 were after June) covered 53 areas (11 in NA), April 22 - Sept. 16, and referred to up to five birds. Young bird in Dunnock's nest, Stanton Prior (PGF); juveniles seen at CVL and Lansdown.

BARN OWL

NA Reported only from Tytherington and Aust; at latter, a ringed bird found dead on M4 motorway had been hand-reared and released at Littleton on Severn (per AEB). Reports of one hunting earlier in year at Aust probably referred to this bird.

SA Records from 12 places, mainly from CVL, Wrington, Marksbury and Nailsea. Nest with 5 eggs, ST66; brood of four ringed, ST65.

LITTLE OWL

Reported from 50 one-km squares (half in NA). Breeding proved in three 10-km squares (ST58, 68 and 69) in NA and three nests discovered in SA (all in ST66). Noted in Bristol at Stoke Bishop, May.

TAWNY OWL

Reported from 34 one-km squares (11 in NA) of which nine were within Bristol. Nesting proved in NA at Tytherington, Cromhall and Dodington Ash and in SA at Timsbury, Marksbury and near CVL.

SHORT-EARED OWL

Noted on coast and inland up to April 29 and from Oct. 2; mostly single birds, but up to four at Chittening, October onwards. One, Steep Holm, Oct. 12th. One crash-landed in fog on mud, R. Avon, Shirehampton, Oct. 13 - released, Chittening, Nov. 5 (AJTE).

SWIFT

First noted on April 23, at CVL; up to 1,000 there by June 5th. Flock of 750, Abbots Leigh, July 24th. Migratory movements to W or SW noted at Nailsea, Aug. 11 and 13, and at Brislington, Bristol on 12th (some 1,000 in two hours). An exceptionally late record was of one at Littleton on Severn on Nov. 12 (JH).

KINGFISHER

Reported in every month from 23 localities (five in NA). Breeding confirmed at Thornbury, Keynsham and CVL.

HOOPOE

NA One, Rangeworthy, early July, on track through meadow; watched from 8 m range (WWM).

GREEN WOODPECKER

Reports (163) of up to three birds covered all months and 68 localities (22 in NA) including Victoria Park, Bath and the Frome valley in Bristol.

GREAT SPOTTED WOODPECKER

Reports (171) of up to five birds covered all months and 71 widespread localities. Breeding records in Bristol from Westbury on Trym and Durdham Down.

LESSER SPOTTED WOODPECKER

Single birds reported in NA at Cromhall, Marshfield and in Bristol at Vassalls Park, and Clifton and Durdham Downs; and in SA at Brislington and Stockwood (Bristol), Leigh Woods, Abbots Leigh, Portbury, Banwell; Barrow Gurney, Blagdon and Chew Valley reservoirs; Keynsham, Corston, Saltford and Combe Hay.

SAND MARTIN

Breeding records from R. Frome, Bristol and from Keynsham; at latter only three pairs bred, cf. 25 pairs in 1977. No report from Parson St Railway Station, Bristol.

TREE PIPIT

Up to eight reported, April 2 - Aug. 26, in NA from Severnside and Filton and in SA from Abbots Leigh, SGW, Portishead, Clevedon, Sand Point, Weston-s-Mare, Brockley Combe Wrington Warren, Lulsgate, CVL, Pensford and Keynsham. Noted in Bristol over College Green, May 2nd. Steep Holm: 16 on passage, Aug. 21-26 (AJP).

ROCK PIPIT and WATER PIPIT

Up to twelve noted on coast and at reservoirs; influx of 25 at SGW, Oct. 29 (GJU). Breeding proved, Clevedon - Yeo Estuary. Up to three Water Pipits reported at Barrow Gurney Resrs. and at CVL, Jan. 2 - May 2 and Aug. 16 to end of year.

YELLOW WAGTAIL

Reports (106) from Severnside (NA) and Queen Charlton, Ashton Marsh, Abbots Leigh, SGW, Portishead; Tickenham, Nailsea and Kenn Moors; Clevedon, Sand Bay, CVL and Steep Holm, April 4 - Oct. 3rd.

PIED WAGTAIL and WHITE WAGTAIL

Largest numbers reported were in Bristol, including roosts of 500 in Cumberland Basin, Jan. 22, and 200 in Broadmead (in tree decorated with Christmas lights), Dec. 2nd. Pre-roost gatherings of 200+ at Oldbury Power Station, Feb. 5, and of 50 at Rolls-Royce factory, Patchway, on 23rd. Up to 16 White Wagtails noted at ASW on April 30 and at Sand Bay, April 30 - May 2 and on Sept. 20th.

WAXWING

NA One, Filton, Feb. 10-11, feeding in garden on Cotoneaster berries (J and AEH).

DIPPER

One or two noted in NA at Frampton Cotterell, Wick, Bitton and Shockerwick; and in SA in Winford - Chew Magna area (breeding proved) and at Combe Hay, Midford, Limpley Stoke and Freshford.

NIGHTINGALE

Up to eight singing males reported, April 23 - June 10, in NA at Tortworth, Littleton on Severn, Thornbury, Inglestone Common and Sea Mills; and in SA at Wellow, Midford, Combe Down and Friary and Rainbow Woods.

BLACK REDSTART

Single birds reported, Jan. 2 - Feb. 18 and Oct. 23 - Dec. 15, in NA at Severnside and in SA at SGW, Sand Bay, Worlebury, Weston-s-Mare, Uphill and CVL (15 observers).

REDSTART

NA Only three reports: single birds at Marshfield, Aug. 20; West Littleton, Aug, 28 and New Passage, Sept. 9th.
SA Reports of one, sometimes two, April 22 - Oct. 10 at SGW, Cadbury Camp, Wrington Warren, Sand Bay, Bleadon Hill, Steep Holm, CVL, Newton Park, and Prior Park, Bath.

WHINCHAT

Reports, April 23 - Oct. 12, of one or two (except where shown), in NA from Tortworth, Severnside (5, May 5). Filton, Clifton Down (Bristol) and Lansdown; and in SA from Queen Charlton, Whitchurch and Stockwood (Bristol) (3 at latter, Sept. 1), SGW (3, April 30), Nailsea and Kenn Moors, Sand Bay (4, April 24), Banwell, Steep Holm, Burrington Combe. CVL and Stanton Prior.

STONECHAT

Reports (114), January - March and September - December, of up to seven at 29 widespread NA and SA localities. Breeding season reports from SGW, Burrington Combe and in Bristol from Sea Mills, Kingsweston and Whitchurch old airport.

WHEATEAR

Reports of up to 19 on passage, March 16 - June 11 and July 11 - Oct. 11, from 12 localities in NA and 28 in SA.

GRASSHOPPER WARBLER

Singing males noted, April 16 - July 14, in NA at Tytherington, Alveston, Elberton, Chittening, Filton and St George (Bristol); and in SA at Whitchurch and Stockwood (Bristol), Ashton Park, SGW, Gordano Valley, Brockley Combe, Sand Point, Wick St Lawrence, CVL and Burrington Combe. One at Weston-s-Mare on late date of Oct. 3 (RA).

DARTFORD WARBLER

SA One, seen at close range, Portishead, March 4 (MAS).

WOOD WARBLER

Up to five singing males reported, May 3 - June 7, from Eastville Park, Bristol (NA) and in SA from Leigh Woods, Ashton Park, Abbots Leigh, Portbury, Brockley and Goblin Combes, Weston Woods, and Rainbow Wood, Bath. Passage migrants noted at Cadbury Camp, Aug. 12 and at CVL, Aug. 21st.

FIRECREST

NA Two at Chittening, Oct. 28 (GY).

SA Single birds at Odd Down, Sept. 21 (RMC), Steep Holm, Oct. 8-12 (AJP), Whitchurch, Oct. 20 (DAA), Abbots Leigh, Nov. 12 and Dec. 21 (TBS), and Sand Bay, Dec. 22 (JW).

PIED FLYCATCHER

Reports of one, occasionally two, on passage, April 23 - May 7 and Aug. 20-23, in NA from Cromhall, Awkley, Pilning and in Bristol from Wickham Glen (R. Frome) and Cotham; and in SA from Arno's Vale (Bristol), Leigh Woods, Wraxall, Portishead, Sand Point, Weston-s-Mare and Steep Holm.

BEARDED TIT

SA Up to four, CVL, Nov. 4 - Dec. 26 (RMC, AHD et al.).

WILLOW TIT

NA One, Inglestone Common, May 27 (PMG) and three, Sept. 3 (DHP); one, Marshfield, Aug. 11th.

SA Two, Ashton Park, April 2 (CW); two, Wrington Warren, Aug. 17 (RA). Single birds, Leigh Woods, April 6 and Aug. 6 (NAL, JSR, TR) and CVL, Oct. 8 (CVRS). Note field descriptions requested.

RAVEN

NA One at Aust on Feb. 12 (JH).

SA Four at Sand Point, March 11 (KAT). Single birds at Worlebury on Jan. 24 (TB); Bleadon Hill, July 16 (SBE); Steep Holm, Sept. 2-4 (AJP) and Nailsea, Nov. 5 (EVS).

BRAMBLING

The largest flock reported was of 50 at SGW throughout January. Other reports of up to ten, Jan. 7 - May 1 and Oct. 11 - Dec. 16, at 17 widespread localities in NA and in SA.

SISKIN

Widespread reports (90) of up to 35 birds, Jan. 7 - April 9 and Oct. 8 - Dec. 22nd.

TWITE

Reports of up to 40, Jan. 6 - March 27 and Oct. 4 to year-end from Severnside (NA) and the coast from R. Avon to R. Axe (SA).

REDPOLL

Up to 30 reported, Feb. 12 - July 14 and Oct. 4 - Dec. 26, from 24 widespread areas in NA and SA. Noted in breeding season at Burrington and Goblin Combes, but breeding not confirmed.

HAWFINCH

Reports (38) of single birds and parties of up to eight, up to April 24 and from July 6 onwards, in NA from Inglestone Common, Lansdown and in Bristol from Blaise Woods, Sneyd Park and Durdham and Clifton Downs; and in SA from Leigh Woods, Abbots Leigh, Cadbury Camp, Nailsea and Brockley Combe. Breeding not confirmed.

SNOW BUNTING

NA One record: a female at Severn Beach, Feb. 26 (NTL, RGT).

CORN BUNTING

Breeding-season reports from Hawkesbury Upton and the Tormarton - Marshfield area (NA) and from Compton Dando and Odd Down (SA).

OTHER COMMON OR REGULARLY-OCCURRING SPECIES PRESENT:

Residents: Pheasant, Woodpigeon, Collared Dove, Skylark, Meadow Pipit, Grey Wagtail, Wren, Dunnock, Robin, Blackbird, Song and Mistle Thrushes, Goldcrest; Long-tailed, Marsh, Coal, Blue and Great Tits; Nuthatch, Treecreeper, Jay, Magpie, Jackdaw, Rook, Carrion Crow, Starling, House Sparrow, Tree Sparrow, Chaffinch, Goldfinch, Greenfinch, Linnet, Bullfinch, Yellowhammer, Reed Bunting.

Summer or winter visitors: Swallow, House Martin, Fieldfare, Redwing; Sedge, Reed and Garden Warblers; Lesser Whitethroat, Whitethroat, Blackcap, Chiffchaff, Willow Warbler, Spotted Flycatcher.

CONTRIBUTORS

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ERRATA, 1977 REPORT

Page 56 ICELAND GULL Date should read March 5 not Nov. 5
Page 60 SHORE LARK Date should read Nov. 5 not Dec. 5-11

BIBLIOGRAPHY OF BIRDS OF AVON

The Bristol Bird Report and its predecessor, Notes on the Birds of the Bristol District, published in the Proceedings of Bristol Naturalists' Society from 1936 to 1974 (covering the years 1935 to 1973) dealt with a more-or-less arbitrarily defined area around Bristol. To the south of the R. Avon, this coincided with a few exceptions with the area covered since 1923 by District I of the Somerset Bird Report. To the north,tthe Bristol Report was the only reporting medium until in 1963 the North Glos Naturalists' Society launched the Gloucestershire Bird Report. Strenuous but not always successful efforts were made to ensure that the Bristol Reports presented the same facts for the common areas as those given in the two county reports. From the reorganisation of local government in 1974 the Gloucestershire Report confined itself to that county's new boundaries, and the area north of Bristol was once again only covered in our Report, which was renamed the Avon Bird Report and confined strictly to the new county's area. To the south, the Somerset Report continued to cover the old county, but the boundaries of its District 1 were altered to agree exactly with those of south Avon. Therefore for the years 1974 to 1977 duplicate cover of south Avon continued; from then on, the Somerset Report too dealt only with the new county, so that duplicate reporting at last ceased.

The issue of *Somerset Birds* for October 1978 (covering 1977 but wrongly dated 1978 on the cover) contains a useful list of species and subspecies that have been recorded in the new Avon and the new Somerset, with notes on their status. This list is based only on the Somerset Reports and on the book *The Birds of Somerset* (Palmer & Ballance, Longmans 1968) but it was checked in manuscript by members of the Avon Report Editorial Committee.

BRISTOL BOTANY IN 1978

BY A. J. WILLIS

(Department of Botany, University of Sheffield)

The year 1978 was a little below average as regards temperature and hours of sunshine. Rainfall, however, was distinctly low, 735.0 mm being recorded at Long Ashton Research Station, only 79.7% of the average. The start of the year was wet; February and particularly April were cold months, leading to a rather late spring. The summer was cool and cloudy. May was a dry month and the autumn exceptionally dry, very little rain indeed (3.8 mm) falling in October. Temperatures were rather above average towards the end of the year, and fairly heavy rain in December partly offset the drought of the previous four months. Mean annual soil temperatures at Long Ashton were 9.5°C at 10 cm depth, 9.9°C at 20 cm and 10.7°C at 50 cm.

Some plants flowered well, including *Anacamptis pyramidalis* (L.) Rich. of which there was a fine showing on Hursley Hill, Pensford *(A.F.D.)*. Also *Butomus umbellatus* L. flowered on Nailsea Moor in sites where it had not been seen since 1968 *(E.S. Smith)*. Numerous records were made of the persistence of plants in known localities; these include *Spergularia rubra* (L.) J. & C. Presl near the railway line at Keynsham where it was found new to North Somerset in 1915, *Ornithopus perpusillus* L. at Keynsham and Brislington, and *Myriophyllum spicatum* L. in Tortworth Park, *R.S.C.* A small patch of *Carex vesicaria* L. persists below Axbridge where it was first discovered in 1877, and rediscovered in 1947 (see *Bristol Botany in 1946)*, and *C. diandra* Schrank still grows on Ashcott Heath, *R.S.C.* Despite many changes in Westerleigh Common, Yate, which was ploughed up during the war years, *Peplis portula* L. has persisted in this locality where it has long been known, *G.W.G.* Another remarkable example of the powers of persistence is afforded by *Kickxia elatine* (L.) Dumort. This plant appeared, probably from dormant seed, in a garden in Yate when a lawn, known once to have been the site of a cornfield, was dug up more than sixteen years later, *G.W.G.* On the other hand, some losses to the area are probable. Despite thorough searches, *Dianthus armeria* L. has not been seen on Cadbury Hill, above Yatton, for many years, although the site seems undisturbed.

Among the more notable records this year are *Sorbus* × *confusa*, a first confirmed report of this hybrid outside the Wye Valley, *Atriplex longipes* × *prostrata* new to the area, and *Hieracium vagum* new to v.c. 34. New localities have been found for *Scleranthus annuus* and *Gastridium ventricosum*. Numerous aliens, including many grasses, have been recorded from the Brislington Tip. A substantial number of these are new to v.c. 6, and several are new to the Bristol area, including *Cleome spinosa*, *Amaranthus standleyanus*, *Diplachne fusca* and *Eragrostis neomexicana*. Important bryophyte records include *Platygyrium repens*, a very rare moss in Britain new to the area, *Tortella inflexa* new to v.c. 34, and the very rare *Weissia levieri* in a new locality in Somerset. Preparation of the section on Charophyta by Dr. R.H. Bailey and Mrs. J.A. Moore for the Supplement to the *Flora of Gloucestershire* has focussed interest on the stoneworts, several new records being made.

Rescue of rare plants of the Avon Gorge endangered by rock blasting and removal operations has continued actively. By means of safety harness attached to ropes, threatened species have been saved and transplanted in the University Botanic Garden or Experimental Greenhouse. Among these rarities are *Veronica spicata* L. subsp. *hybrida* (L.) E.F. Warb., *Geranium sanguineum* L., *Potentilla tabernaemontani* Aschers., *Sedum telephium* L. and diploid *Polypodium*. Dr. L.C. Frost, C.M. Lovatt and M.D. Ames of the Department of Botany of the University of Bristol have been active in this work.

An interesting publication entitled *Steep Holm* by the Kenneth Allsop Memorial Trust and John Fowles was issued in 1978. A number of authors have contributed to this volume, several chapters being under the authorship of Rodney Legg, including one entitled 'A herbal flora' which gives an illustrated and fairly full account of the plants of the island.

Sadly, Mrs. H.H. Davis, the widow of the ornithologist Howard Davis, died suddenly in June 1978. She did much for the Botanical Section of the Society in the fifties. Besides acting as Secretary to the Section for six years, she gave several talks and often provided exhibits. In later years she was occupied in caring for her husband in his crippling illness.

Names of contributors associated with several records, or with the determination of plants, are abbreviated thus:

J.A., Mrs. J. Appleyard
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R.M.P., R.M. Payne
R.D.R., R.D. Randall
R.B.G.R., Capt. R.G.B. Roe, R.N.
A.T., A. Titchen
H.G.W., H.G. Ward

G: Gloucestershire
S: Somerset

The area covered by this report is essentially that defined by White for his *Flora of Bristol* (but the old Gloucestershire county eastward of that map to the Wiltshire boundary is included). The area comprises the northern part of the Watsonian vice county of North Somerset (v.c.6) and the southern part of West Gloucestershire (v.c. 34).

Cystopteris fragilis (L.) Bernh. A few plants still on Hampton Rocks, near Bath, S, *R.D.R.*

Polypodium australe Fée Church Hill, Clevedon, S, *P.J.M.N.*

Ranunculus penicillatus (Dumort.) Bab. Abundant in the River Chew at Compton Dando, S, *R.S.C.*

Ceratophyllum demersum L. Pool, Ashton Court Park, near Bristol, S, *R.S.C.*

Fumaria muralis Sond. ex Koch subsp. *boraei* (Jord.) Pugsl. On rubbish tip between Entry Hill and Wellsway, south of Bath, *R.D.R.*, conf. *M.G. Daker*.

Rorippa islandica (Oeder) Borbás Docks, Prince Street, Bristol, G, *Miss B. Sydenham*, conf. *I.F.G.*

Hypericum humifusum L. In small quantity, Westerleigh Common, Yate, and on old mole hills, Sodbury Common, G, *G.W.G.* Also Crook Peak, S, *R.S.C.*

Saponaria officinalis L. Roadside near Tockington Common, Olveston, G, *I.F.G.* Old lead quarries, Clifton Downs, Bristol, G, *Miss M.A. James*, where it has been known to *C.M. Lovatt* since 1977.

Spergula arvensis L. Edge of cornfield, near Cold Ashton, G, *D.G.*, conf. *A.J.W.* Also top of Biddlecombe, Wells, S, *I.F.G.*

Scleranthus annuus L. Ploughed field, Hinton Charterhouse, S, *A. Duff*.

Chenopodium ficifolium Sm. Catcott Heath, S, *R.S.C.*

Atriplex longipes Drejer × *prostrata* Boucher ex DC. Lamplighters, Shirehampton, G, *I.F.G.*, det. *P.M. Taschereau*. This is a first record of this hybrid for the Bristol area; the locality is that given for *A. longipes* reported in *Bristol Botany in 1977*, p.20.

Tilia cordata Mill. Two very small colonies of well-grown trees, on isolated rock outcrops, Cheddar Gorge, S, *P.J.M.N.* These may represent colonizers rather than relicts.

Rhamnus catharticus L. Weston Big Wood, North Weston, S, *P.J.M.N.*

Medicago arabica (L.) Huds. Keynsham, S, *R.S.C.* Also Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*

Trifolium squamosum L. Two patches, edge of dune marsh, Berrow, S, *R.S.C.*

T. scabrum L. Above Cheddar Gorge, on south side, S, *R.M.P.* Recorded in 1907 by *Miss I.M. Roper* (ms) for grassy slope, Cheddar Rocks.

Vicia lutea L. Single plant, Market Garden, Bromley Heath, Downend, Bristol, G, *A.L.G.*

Potentilla argentea L. Persistent at Charterhouse, S, *Mrs. M.A. Silcocks*, conf. *R.S.C.*, from where it was reported in *Bristol Botany in 1927.*

Crataegus oxyacanthoides Thuill. Mill Pill Bridge, Sea Mills, G, *Mrs. A. Royle*, per *I.F.G.*

Sorbus porrigentiformis E. F. Warb. Very rare in Burrington Combe, S, *P.J.M.N.* Four shrubs with fruit make the determination certain. At the time when the species was newly described, it was stated in *Bristol Botany in 1952* that '*P. rupicola* Syme' from the Combe (and elsewhere) should be named *S. porrigentiformis*, but some of the herbarium material may prove not to be this, *P.J.M.N.*

S. rupicola (Syme) Hedl. In the account relating to Weston Big Wood, North Weston, S, in *A Nature Conservation Review*, Vol. 2, p.69 (ed. by D.A. Ratcliffe, 1977), reference is made to the presence of a *Sorbus* 'close to *S. rupicola*'. Field notes on Weston Big Wood made by *J.F. Archibald* in late 1968 referred to a form 'which approximates in leaf shape to *S. rupicola*', but Mr. Archibald (*in litt.* 1979) states that he never envisaged that the tree which he compared with *S. rupicola* was any more than part of the considerable variability of *S. aria* in the site. Searches by *P.J.M.N.* have shown the presence of a form with leaves with few pairs of veins (*c.* 7) but not otherwise like *rupicola* nor has any uniform series of plants near to this taxon been found. The wooded habitat seems unsuitable for *S. rupicola.*

S. x *confusa* Gremli ex Rouy & Camus [*S.* x *vagensis* Wilmott] Weston Big Wood, S, *J.F. Archibald*, 1968 and *P.J.M.N.*, 1978. This hybrid was reported in *A Nature Conservation Review* (see previous entry) based on records made in 1968 by Mr. Archibald. Detailed examination of the wood in 1978 by *P.J.M.N.* confirmed the presence of the hybrid, three trees being located. *S. aria* (L.) Crantz is well distributed and variable, with *S. torminalis* (L.) Crantz fairly represented in one place and thinly elsewhere. This is the first confirmed record of the hybrid in Britain outside the Wye Valley. However, Mr. J.F. Archibald (*in litt.* 1979) has noted the hybrid in Blean Woods NNR, Kent, in about 1959, but this unpublished record needs confirmation.

S. latifolia (Lam.) Pers. *sensu stricto* A record in *Bristol Botany in 1957* (p. 345) indicates '*latifolia* of gardens' from both sides of the Avon Gorge, G and S. At that time Dr. E.F. Warburg did not accept the view that the plant was *S. latifolia s.s.*, first validly described by J.B. de Lamarck in *Flore françoise*, 1778. *P.J.M.N.* has known for some years that the tree of the Gorge is indeed *S. latifolia s.s.*, the service tree of Fontainebleau; this determination has been agreed by *M. Kovanda*. The tree regenerates in the Gorge, mainly in quarried areas.

S. bristoliensis Wilmott The Leigh Woods specimen collected by Miss Atwood and sent to Mr. Watson, referred to under *Pyrus aria* γ *intermedia* in E.H. Swete's *Flora Bristoliensis* (1854), pp. 30 and 99, has been examined by *C.M.L.* in H.C. Watson's Herbarium at Kew and found to be *S. bristoliensis*.

Saxifraga granulata L. Two small groups still in grassland at Lansdown, Bath (where reported in 1915), S, *D.G.*

Hippophaë rhamnoides L. One small plant, waste ground, Cumberland Basin, Bristol, G, *A.F.D.*

Epilobium lanceolatum Seb. & Mauri Cheddar Wood, S, and a few plants in Stoke Lane Valley, Edford, S, *R.S.C.*

Myriophyllum alterniflorum DC. Several large flowering patches, rhine, Walton Moor, Gordano Valley, S, *R.S.C.*

Scandix pecten-veneris L. Garden weed, Midford, S, *T.C.*

Oenanthe pimpinelloides L. Bathampton Warren, S, *H.G.W.*, conf. *R.G.B.R.* Single plant in hedge, Chew Valley Lake, S, *A.F.D.*

O. lachenalii C.C. Gmel. In marshes at Langridge, S, *T.C.*, Wellow, S, *D.G.*, and near Foxcote, S, *D.G.* and *R.D.R.*, conf. *R.G.B.R.*

Silaum silaus (L.) Schinz & Thell. Hartcliff Rocks, north of Winford, S, *I.F.G.*

Euphorbia platyphyllos L. Several plants in cornfields at Wellow, S, and Stony Littleton, S, *D.G.*

Limonium vulgare Mill. Recently colonizing at seaward edge of dune marsh at Berrow, S, and also the salt marsh in Sand Bay, S, *R.S.C.*

Anagallis arvensis L. Blue form, with fruit pedicels longer than the leaves, near the Trym, Sea Mills, Bristol, G, *C.H.C.* Lilac-flowered form, field, south of Marshfield, G, *D.G.* Also blue form, Brislington Tip, S, *A.L.G.* and *T.G.E.*

Centaurium pulchellum (Sw.) Druce Abundant in steep pasture between Combe Down and Midford, S, *R.D.R.* Also in rides in Cleaves Wood, Hinton Charterhouse, S, *H.G.W.*, and in meadow south of Baggridge, Wellow, S, *D.G.*, conf. *R.G.B.R.*

Lycopsis arvensis L. One plant in allotments, Clandown, Paulton, S, *R.D.R.*

Thymus pulegioides L. Occasional, on golf courses, Ashton Court, near Bristol, S, *C.M.L.*

Acinos arvensis (Lam.) Dandy Edge of Weston Big Wood, North Weston, S, *P.J.M.N.*

Lamium hybridum Vill. In 1977, a very small patch believed to be this plant, Steep Holm, S, *Miss Elizabeth Young*; also seen by *J.G. Keylock* and *R.S.C.*, but not refound in 1978.

Galium x *pomeranicum* Retz. Two distinct nothomorphs of this hybrid occur with the parents (*G. album* Mill. subsp. *album* [*G. mollugo* auct. plur.] and *G. verum* L.) on Dolebury Warren, S, *Dr. C.A. Stace*. One has pale yellow flowers and is clearly mid-way between the parents; the other has pale cream flowers and broader leaves and is closer to *G. album*.

Valerianella carinata Lois. Garden weed, Lower Weston, Bath, S, *D.G.*, conf. *R.G.B.R.*

Bidens tripartita L. Claverton, S, *R.S.C.*

Senecio vulgaris L. var. *radiatus* Koch Persistent near demolished part of Richmond Terrace, Clifton, Bristol, G, *C.M.L.*

Cirsium eriophorum (L.) Scop. Keynsham, S, Hembury Hill, Wookey, S, and at Panborough, S, *R.S.C.*

Onopordum acanthium L. On made ground, Westerleigh Common, Yate, G, *G.W.G.*

Cichorium intybus L. Redwick, G, *I.F.G.*

Hieracium vagum Jord. Bottom of cutting, old railway from Yate to Mangotsfield, Westerleigh, G, *J. Bevan*, det. *P.D. Sell*. This is a first record for v.c. 34; the plant is probably a colonist.

Potamogeton lucens L. Rhine on Nailsea Moor, S, *P.J.M.N.* This Pondweed was reported from Nailsea Moor by D. Fry (see White's *Flora*, pp. 608-9), but is rare in the area and no recent records have been made.

P. pusillus L. Moor ditches below Axbridge, S, *R.S.C.*

Ornithogalum pyrenaicum L. Plentiful in open woodland, Saltford, S, *R.S.C.* Single plant, hedgebank, lane above Monkton Combe, S, *A.F.D.*; nearby was *Silene alba* (Mill.) E.H.L. Krause × *dioica* (L.) Clairv.

Colchicum autumnale L. Still at Beach Wood, Lansdown, G; also in wood near Tracy Park, Wick, G, *I.F.G.*

Spiranthes spiralis (L.) Chevall. Several flowering plants on Hembury Hill, Wookey, S, *R.S.C.*

Gymnadenia conopsea (L.) R.Br. Pastures in Horsecombe Vale, Bath, S, *R.D.R.*

Himantoglossum hircinum (L.) Spreng. In garden, Cadbury Camp Lane, Clapton-in-Gordano, S, *Mrs. J. Clay*, conf. *A.L.G.* The plant may have been introduced some years previously; the flowering of the Lizard Orchid is well known to be erratic.

Lemna gibba L. With *L. polyrhiza* L. at Claverton, S, and in Lox Yeo River, below Crook Peak, S, *R.S.C.*

Sparganium emersum Rehm. Pool at Charterhouse, S, *R.S.C.*

Typha latifolia L. Winterbourne, G, *R.S.C.* Not very common in West Gloucestershire, but still in a small pond at Moorend, G, and in Beck's Pool, Frenchay, G, *A.L.G.*

Scirpus setaceus L. Ashcott Heath, S, *R.S.C.*

Cyperus longus L. A large clump established on the canal bank, Widcombe, Bath, S, *R.D.R.*, conf. *R.G.B.R.*

Carex diandra Schrank A small patch with fruiting spikes, old peat cutting, Ashcott Heath, S, *R.S.C.* Annotations by the Sandwiths in White's *Flora of Bristol* indicate that this locality for the sedge was found *(C.I.S.)* in 1914 (see *Journal of Botany*, 1918, p. 84) and that the plant was 'Still there, and locally plentiful, 1964' *(N.Y.S.)*.

C. disticha Huds. Abundant, Lamplighters, Shirehampton, G, *I.F.G.* Also *C. spicata* Huds., det. *R.W. David.*

Glyceria declinata Bréb. In quantity on bare mud, but rapidly disappeared, Strontia workings below Yate Rocks, G, *G.W.G.*

Festuca rubra L. subsp. *litoralis* (Meyer) Auquier In compact turf, at upper edge of salt marsh, New Passage, Aust and Littleton, G, *T.G.E.*, conf. *C.E.H.*

Lolium perenne L. var. *ramosum* Schumach. Brislington Tip, S, *A.L.G.* and *T.G.E.* This form with a branched inflorescence may perhaps be best regarded as a 'sport'.

L. x *hybridum* Hausskn. Brislington Tip, S, *A.L.G.* and *T.G.E.*, conf. *E.J.C.* This hybrid is new to v.c.6.

Puccinellia rupestris (With.) Fernald & Weatherby Marshes by the Avon, Sea Mills, G, *I.F.G.*

Poa compressa L. Old quarry under Weston Big Wood, North Weston, S, *P.J.M.N.* Also present, abundantly, *Buddleja davidii* Franch.

Holcus mollis L. Street Heath, S, and Shapwick Heath, S, *R.S.C.*

Calamagrostis epigejos (L.) Roth Old quarry on Brassknocker Hill, Monkton Combe, S, *R.D.R.*

Gastridium ventricosum (Gouan) Schinz & Thell. Three colonies, Black Rocks, Avon Gorge, G, *C.M.L.* These finds are welcome additions to the small colony previously known in the Gorge.

Spartina × *townsendii* H. & J. Groves With the much commoner *S. anglica* C.E. Hubbard, bank of River Avon downstream from Leigh Woods, S, *T.G.E.*, conf. *C.E.H.* Searches for the hybrid, to which until recently all *Spartina* in the Severn estuary has been incorrectly referred, have shown it to be rather uncommon but present with *S. anglica* on both sides of the Severn, *T.G.E.*, *A.L.G.* and *Mrs. S.C. Holland.*

ALIENS *Pteris cretica* L. Single plant in stonework of deserted basement, Bath, S, *R.M.P.*

Cleome spinosa Jacq. Brislington Tip, S, *A.L.G.* and *T.G.E.*, det. *E.J.C.* Not previously recorded in the Bristol area.

Sinapis alba L. Brislington Tip, S, *A.L.G.* and *T.G.E.*

Eruca vesicaria (L.) Cav. subsp. *sativa* (Miller) Thell. [*E. sativa* Mill.] Several plants, waste ground, Lawrence Hill, Bristol, G, *A.L.G.* Also Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*, conf. *E.J.C.*

Rapistrum rugosum (L.) All. subsp. *orientale* (L.) Arcangeli [*R. orientale* (L.) Crantz] Rubbish tip, Lawrence Weston, G, *I.F.G.*, conf. *E.J.C.* Also Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*

Lepidium sativum L. Abundant, with *L. ruderale* L., Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*, conf. *E.J.C.* *L. ruderale* also at Sea Mills Station, G, *Mrs. A. Royle.*

Sisymbrium orientale L. Becoming widespread in Bristol: site of demolished building, Newfoundland Road, G, *I.F.G.*; also Lawrence Hill, Whitehall and Fishponds, G, *A.L.G.* Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*

Vaccaria pyramidata Medic. Single plant on pavement, Fishponds, Bristol, G, *A.L.G.* Also Brislington Tip, S, *A.L.G.* and *T.G.E.* On roadside, with *Bupleurum lancifolium* Hornem., Freshford, S, *Mrs. I.C. White,* per *R.G.B.R.*

Portulaca oleracea L. Brislington Tip, S, *A.L.G., C.M.L.* and *A.T.*

Amaranthus standleyanus Parodi ex Covas In abundance, Brislington Tip, S, *A.L.G., C.M.L.* and *A.T.,* conf. *E.J.C.* This Amaranth is new to v.c.6 and to the Bristol area. Also on the Brislington Tip were *A. cruentus* L., conf. *E.J.C., A. retroflexus* L. (abundant) and *A. albus* L.

Chenopodium x *variabile* Aellen Building site, Yate, G, *G.W.G.* Also *Avena fatua* L. var. *glabrata* Peterm.

Kochia scoparia (L.) Schrader *sensu lato* Brislington Tip, S, *A.L.G., C.M.L.* and *A.T.,* det. *E.J.C.*

Malva parviflora L. Brislington Tip, S, *A.L.G.*

Hibiscus trionum L. Single plant, Market Garden, Bromley Heath, Downend, Bristol, G, *A.L.G.,* conf. *E.J.C.*

Trigonella caerulea (L.) Ser. Single plant, tip, Entry Hill, Bath, S, *D.G.,* det. *E.J.C.*

Trifolium lappaceum L. Single plant, Bedminster Down Tip, Bristol, S, *A.L.G., C.M.L.* and *R.M.P.,* conf. *E.J.C.* New to v.c.6.

Cicer arietinum L. Avonmouth Docks, G, *A.L.G.*

Vicia villosa Roth Brislington Tip, S, *A.L.G., C.M.L.* and *A.T.* Also *Melilotus indica* (L.) All.

Sorbaria sorbifolia (L.) A. Braun In 1977, old railway line, Saltford, S, *I.F.G.* Also roadside, Olveston, G, *I.F.G.*

Spiraea douglasii Hook. Lane, Winterbourne Down, G, *A.L.G.*

Potentilla recta L. Old railway sidings, Sea Transport Stores, Yate, G, *G.W.G.* Also present were *Linaria repens* (L.) Mill., *Senecio viscosus* L. and *Anaphalis margaritacea* (L.) Benth.

Duchesnea indica (Andr.) Focke Stoke Bishop, Bristol, G, *Miss B. Sydenham*, conf. *I.F.G.*

Epilobium adenocaulon Hausskn. Now widespread in the district: waste ground, Bitton, G; abundant on Street Heath, S; Cheddar Wood, S; garden weed, Berrow, S; South Stoke, S, *R.S.C.*

Oenothera erythrosepala Borbás On tip, Bitton, G, *R.S.C.*

Coriandrum sativum L. Very abundant, Avonmouth Docks, G, *A.L.G.* Tip, Entry Hill, Bath, S, *D.G.*; also Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*

Anethum graveolens L. Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*, conf. *E.J.C.* Also *Foeniculum vulgare* Mill.

Cuminum cyminum L. Brislington Tip, S, *A.L.G.* and *T.G.E.*, conf. *E.J.C.*

Citrullus lanatus (Thunb.) Mansfield Brislington Tip, S, *A.L.G.* and *T.G.E.* New to the Bristol area.

Polygonum amplexicaule D. Don Established in Burrington Combe, S, *R.M.P.*

P. sachalinense F. Schmidt A large clump by road, West End, near Wickwar, G, *A.L.G.*

Rumex cristatus DC. A large colony on roadside, Beacon Hill, near Shepton Mallet, S, *R.M.P.*

Lysimachia punctata L. Established and spreading on disused railway line, Oldfield Linear Park, Bath, S, *H.G.W.*

Syringa vulgaris L. Naturalized on cliff on north-west side of Cheddar Gorge, S, *P.J.M.N.*

Borago officinalis L. Hedge, Camerton, S, *A.F.D.*

Nicandra physalodes (L.) Gaertn. Abundant, Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.* (where also *Datura stramonium* L. and *Cannabis sativa* L.). Also on tip at Entry Hill, Bath, S, *D.G.*

Solanum rostratum Dunal (*S. cornutum* Lam.) Single plant, Elberton Tip, G, *A.L.G.*, conf. *E.J.C.*

Verbascum blattaria L. Yellow-flowered form, abundant in disused orchard, Winterbourne Down, G, *A.L.G.* Also three plants in allotments, Clandown, Paulton, S, *R.D.R.*

Cymbalaria muralis Gaertn., Mey. & Scherb. White-flowered form long established on walls, Stanton Prior, S, *A.F.D.*

Salvia reflexa Hornem. Brislington Tip, S, *A.L.G.* and *T.G.E.*, det. *E.J.C.*

Xanthium spinosum L. Avonmouth Docks, G, *A.L.G.* Also *Tagetes minuta* L.

Erigeron mucronatus DC. Several plants, stone wall, Burrington, S, *R.M.P.*

Conyza canadensis (L.) Cronq. Sand Point, S, *R.S.C.*

Centaurea montana L. Watery Combe, Chewton Mendip, S, *I.F.G.*

C. diluta Aiton Rubbish tip, Entry Hill, Bath, S, *T.C.* Abundant on Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*, where also *Guizotia abyssinica* (L. fil.) Cass. and *Carthamus tinctorius* L. in abundance.

Cicerbita macrophylla (Willd.) Wallr. Near the Trym, Shirehampton Road, Bristol, G, *C.H.C.* Between Bathampton Lane and the Canal, S, *H.G.W.* Also scattered by roadside, Litton, S, *I.F.G.*

Endymion hispanicus (Mill.) Chouard x *non-scriptus* (L.) Garcke Waste ground, Newfoundland Road, Bristol, G, *I.F.G.*

Allium carinatum L. A very small patch, Church Hill, Clevedon, S, *P.J.M.N.* Locally abundant on North Road, Leigh Woods, S, *I.F.G.*, where known to *R.V. Russell* for a number of years.

Calla palustris L. By roadside, South Stoke, S, *Miss J. Haytree.*

Sorghum halepense (L.) Pers. Weed near Salthouse Bay, Clevedon, S, *G.W.G.*, det. *C.E.H.* Also Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*

Diplachne fusca (L.) Beauv. Brislington Tip, S, *A.L.G.*, *C.M.L.* and *A.T.*, det. *C.E.H.* A first record for the Bristol area.

Lolium temulentum L. var *arvense* Liljebl. Brislington Tip, S, *A.L.G.* and *T.G.E.*, conf. *E.J.C.*

L. rigidum Gaud. Brislington Tip, S, *A.L.G.* This Mediterranean annual is new to v.c.6. It was recorded from Avonmouth Docks in 1934 by C.I. and N.Y. Sandwith (see *Bot. Exchange Club Rep.* for 1935, p.48).

Aegilops cf. *tauschii* Coss. In 1977, Avonmouth Docks, G, *A.L.G., det. E.J.C.*

Eragrostis neomexicana Vasey Brislington Tip, S, *A.L.G., T.G.E., C.M.L.* and *A.T.,* det. *C.E.H.,* a first record for the Bristol district. Also present was *E. cilianensis* (All.) E. Mosher, new to v.c.6.

Oryzopsis miliacea (L.) Benth. & Hook. ex Aschers. & Schweinf. Brislington Tip, S, *A.L.G.* Also *Triticum durum* Desf., *A.L.G.* and *T.G.E.,* det. *E.J.C.,* conf. *C.E.H.;* and *Zea mays* L.

Phalaris paradoxa L. var. *praemorsa* Coss. & Dur. Brislington Tip, S, *A.L.G.* and *T.G.E.,* conf. *C.E.H.* Also *P. canariensis* L. (abundant) and *P. arundinacea* L. var. *picta* L., *A.L.G., C.M.L.* and *A.T.*

Echinochloa utilis Ohwi & Yabuno Abundant, Brislington Tip, S, *A.L.G., T.G.E., C.M.L.* and *A.T.,* conf. *C.E.H.* Abundant on the tip in addition were *E. frumentacea* Link, *E. colonum* (L.) Link and *E. crus-galli* (L.) Beauv. var. *breviseta* (Doell.) Neils., all conf. *C.E.H.* Also *E. crus-galli* (L.) Beauv. *submutica* Neils. on rubbish tip, Entry Hill, Bath, S, *D.G.,* det. *C.E.H.*

Digitaria sanguinalis (L.) Scop. One plant in paving near the Assembly Rooms, Bath, S, *R.D.R.,* det. *A.L.G.,* conf. *C.E.H.*

D. ciliaris (Retz.) Koel. Avonmouth Dock, G, *Mrs. M.A. Silcocks,* det. *C.E.H.* Abundant, Brislington Tip, S, *A.L.G., T.G.E., C.M.L.* and *A.T.,* det. *C.E.H.* First records for the Bristol area.

Setaria geniculata (Lam.) Beauv. Brislington Tip, S, *A.L.G.* and *T.G.E.,* det. *E.J.C.,* conf. *C.E.H.* Also present were *S. italica* (L.) Beauv., *A.L.G.* and *T.G.E.,* and *S. lutescens* (Weigel) Hubbard [*S. glauca* auct.], *A.L.G., T.G.E., C.M.L.* and *A.T.* In abundance were *S. viridis* (L.) Beauv. and *S. verticillata* (L.) Beauv., *A.L.G., C.M.L.* and *A.T.*

Panicum capillare L. Brislington Tip, S, *A.L.G.*, *T.G.E.*, *C.M.L.* and *A.T.*, conf. *C.E.H.* and *E.J.C.* Abundant was *P. miliaceum* L.

BRYOPHYTES: HEPATICS *Riccia fluitans* L. Rhine on Nailsea Moor, S, *P.J.M.N.*

Barbilophozia attenuata (Mart.) Loeske On acid sandstone, Wurt Pit, near Chewton Mendip, S, *J.A.* This is a second record for v.c.6; this hepatic may have disappeared from the original locality near Holcombe.

MOSSES *Dicranum montanum* Hedw. Rotting branches, Emborough Pool, S, *J.A.*

Campylopus pyriformis (Schultz) Brid. var. *azoricus* (Mitt.) M. Corley comb. nov. In 1966, Shapwick Heath, S, *J.A.*, conf. *M. Corley.*

Tortella inflexa (Bruch) Broth. In open site, Horton, G, 1967, *G.W.G.*, conf. *J.A.* This species, new to v.c. 34, may be elsewhere on the Oolite in this district; it is known from neighbouring vice-counties (see E.C. Wallace, *Tortella inflexa* (Bruch) Broth. in England, *Journal of Bryology*, 1972, Vol. 7, Part 2, 153-156).

Weissia levieri (Limpr.) Kindb. Wain's Hill, Clevedon, S, *G.W.G.*, conf. *J.A.* This interesting record extends the known range of this very rare moss, reported from Brean Down in 1959, and in Britain known elsewhere only in Glamorgan.

Funaria pulchella Philib. Wain's Hill, Clevedon, S, *G.W.G.*, conf. *J.A.* This species, fairly recently recognized in Britain, is a close relative of *F. muhlenbergii* Turn. and occurs in similar habitats to the latter but is less common; it is known from N. Somerset and W. Gloucestershire (see A.J.E. Smith, *The Moss Flora of Britain and Ireland*, 1978, p. 342).

Bryum dunense Smith & Whitehouse This moss is one of the four taxa now recognized in Britain and Ireland in the *Bryum bicolor* complex (see A.J.E. Smith and H.L.K. Whitehouse, *Journal of Bryology*, 1978, Vol. 10, Part 1, 29-47). It is known from Steep Holm, 1966, *J.A.*, and inland at West Horrington, S, *J.A.* This form is rare and mainly coastal. *B. bicolor*

Dicks. is common in v.c.6 and generally widespread; the 'occasional' *B. gemmiferum* Wilcz. & Dem. is known from Berrow, S, 1969, *J.A.*; *B. gemmilucens* Wilcz. & Dem., recorded from Chelvey Batch, S, 1967, *J.A.*, is a rare taxon.

Zygodon viridissimus (Dicks.) R. Br. var. *stirtonii* (Schimp. ex Stirt.) Hagen Church Hill, Clevedon, S, *G.W.G.*, conf. *J.A.*

Heterocladium heteropterum (Bruch ex Schwaegr.) B., S. & G. Wurt Pit, near Chewton Mendip, S, *J.A.*

Hygrohypnum luridum (Hedw.) Jenn. Woodland below Worlebury Camp, Weston-super-Mare, S, *G.W.G.*, conf. *J.A.*

Platygyrium repens (Brid.) B., S. & G. Damp wooded valley near West Cranmore, Shepton Mallet, S, *D.G. Long*. A scrap of this moss was found mixed with *Metzgeria temperata* Kuwah. (see *Journal of Bryology*, 1977, Vol. 9, Part 4, 441-449), for which D.G. Long had visited the site. The moss was subsequently refound in the site by *D.G. Long* and *J.A.* New to Somerset, this moss is very rare indeed in Britain.

CHAROPHYTES *Chara delicatula* C.A. Agardh Pond, Kingsgate Park by Stanshawe's Court, Yate, G, *G.W.G.* Also Strontia Pits, Barber's Court Farm, Wickwar, G, *Dr. R.H. Bailey* and *Mrs. J.A. Moore.*

C. vulgaris L. Lake, Tyley Bottom, Wotton-under-Edge, G, *Dr. R.H. Bailey* and *Mrs. J.A. Moore.*

I thank everyone who has supplied records and assisted with these, especially Mrs. J. Appleyard, Miss I.F. Gravestock, Mr. A.L. Grenfell, Mrs. S.C. Holland, Mr. P.J.M. Nethercott and Captain R.G.B. Roe. I am also indebted to Mr. M.W. Huxley of Long Ashton Research Station for the supply of meteorological records.

ENTOMOLOGICAL NOTES, BRISTOL DISTRICT, 1978

COMPILED BY THE RECORDERS OF THE ENTOMOLOGICAL SECTION

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Although the numbers of many insects were considered to be below average in 1978 by local entomologists, the total of records received was far in excess of any previous years and covered a wide range of species from many different families. This increase in records was due in part to an increase of contributors, including several specialists in orders not previously strongly represented in the annual return of observations. Details of only a small proportion of the records received can be included in these Notes but all records are filed by the individual Recorders responsible for the various orders. Some of the material is extracted for use in local and national recording schemes where full acknowledgement is given to the contributors. An additional section on the Hemiptera - Heteroptera (True Bugs) has been compiled by Mr R.S. Cropper who has kindly agreed to include the Homoptera (Plant Hoppers) in future years.

A generally cool spring and early summer with below average sunshine seriously affected the emergence of many insects. Generally 1978 was a year of abnormal weather patterns of which the cool spring and early summer with below average sunshine was probably the main cause depressing the numbers of many species. Towards the end of a comparatively mild winter severe blizzards swept south-west England in the third week of February with heavy and prolonged snow. April was the coldest since 1936 with below average temperatures persisting until early May when warmer weather occurred until early June. Unsettled weather with rain and below average temperatures continued throughout July to mid August followed by a drier and warmer spell. In contrast to the summer, autumn was exceptionally warm and dry - the driest in fact for 200 years in the British Isles. October was the driest recorded at Long Ashton since records started there in 1921. The empty reservoirs and ponds, dried-up streams and rhines were reminiscent of the summer of 1976. The severe autumn drought must have been disastrous for the aquatic and subaquatic larvae of many species which will deplete populations of species which over-winter at the larval stage in mud or water.

The 'Bristol District' for the purposes of these Notes includes records from localities in Avon and also areas of entomological interest in the adjacent areas of Somerset and Gloucestershire. These two latter counties are indicated with S, or G, respectively - all other records refer to Avon. Records are of single specimens unless otherwise stated.

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BUTTERFLIES (Lepidoptera) by B.S. Harper

Like the previous year 1978 was again a poor year for butterflies in the District, with many of the commoner species well below usual numbers, if the records received are an accurate guide. Field-work was restricted by inclement weather which may in part account for the paucity of records for certain species at the period of their main emergence. Unconfirmed reports of the Purple Emperor and also of the Brown Hairstreak were received from localities in Gloucestershire but these have not been listed in the report. A new locality for both the White Admiral and the Pearl-bordered Fritillary has been reported for Somerset. The species selected for special study - the Silver-washed Fritillary and the Brown Argus - were each noted in only three localities. The scientific names and order of species follow those given in the checklist of species in *A Field Guide to the Butterflies of Britain and Europe* by L.G. Higgins and N.D. Riley, 3rd ed. (1975) and published by Collins.

It is with regret that we record the death of Mr A.N. Grose who was Recorder for Butterflies for the Section until ill-health forced him to give this up in 1976.

Limenitis camilla L. (White Admiral). Michael Wood, nr. Stone, G, several dates, mid-July with maximum of 20 on 14th, and two, Street Heath, nr. Street, S, July 16.

Vanessa atlanta L. (Red Admiral). Scarce throughout the area where only singles reported from June 25 to Oct. 11.

Vanessa cardui L. (Painted Lady). Brean Down, S. June 8; Leigh Woods, nr. Bristol, Aug. 19; Weston-s-Mare, Aug. 23; Almondsbury, Sept. 4; Eastwood Park, Falfield, Sept. 14; Avon Gorge, Bristol, Sept. 18; Berrow, S, Sept. 19 and Banwell on 21st.

Polygonia c-album L. (Comma). Widely recorded but only a few individuals from each locality. Several records from within the City of Bristol boundary.

Argynnis paphia L. (Silver-washed Fritillary). Congresbury, July 7; several, Street Heath, S, July 16 and a single, Brockley, Aug. 17.

Mesoacidalia aglaja (Dark-green Fritillary). Four, Brockley Combe, nr. Brockley, July 15 and six, same place, Aug. 11; several, Charterhouse, S, Aug. 27 and one, Cheddar Gorge, S, July 30.

Clossiana selene Schiff. (Small Pearl-bordered Fritillary). Charterhouse, S, June 9; ten, Cheddar Gorge, S, June 18; five, Brockley, June 25; Compton Bishop, S, June 25 and Velvet Bottom, nr. Charterhouse, S, June 30.

Clossiana euphrosyne L. (Pearl-bordered Fritillary). Brockley, May 25; three, Walton Hill, Street, S, June 2 and six, Goblin Combe, nr. Cleeve, June 3.

Euphydryas aurinia L. (Marsh Fritillary). Abundant, Shapwick Heath, S, May 25 and several, same place, June 11; 12, Charterhouse Mendip, S, June 8 and one reported from Hinton Charterhouse, nr. Bath in June.

Melanargia galathea L. (Marbled White). Generally a poor season for this species but recorded from several new localities which included: several, Shapwich Heath, S, July 6; five, Eastwood Park, Falfield, June 11; several, coastal dunes, Berrow, S, July 16 and numerous, Durdham Downs, Bristol, same date; several, Keynsham, July 20.

Hipparchia semele L. (Grayling). Shapwick Heath, S, July 15; Uphill, Aug. 2 and several, Brean Down, S, August 31.

Aphantopus hyperantus L. (Ringlet). Records from only six localities with a maximum of 40, Michael Wood, nr. Stone, G, July 12.

Lassiomata megera L. (Wall Brown). Common, Weston-s-Mare, May-Sept.; several, Stinchcombe, G, May 27; two, Cadbury Camp, Tickenham, May 29; Shute Shelve, nr. Axbridge, May 30; two, Walton Hill, Street, June 2; Congresbury, Aug. 23; three, Tormarton, Aug. 26; two, Hutton, Aug. 27 and two, Failand, Aug. 28.

Quercosia quercus L. (Purple Hairstreak). Michael Wood, nr. Stone, G, July 12; seven, Henbury, Bristol, July 14; three, Weston Woods, Weston-s-Mare, July 28 and a single, same place, Aug. 23; Durdham Downs, Bristol, Aug. 20.

Strymonidia w-album Knoch. (White Letter Hairstreak). Several Hancocks Wood, Long Ashton, late July, and one, Durdham Downs, Bristol, Aug. 12.

Callophrys rubi L. (Green Hairstreak). Walton-in-Gordano, May 18; Goblin Combe, nr. Cleeve, May 20; several, Stinchcombe, G, May 27 and on same date, three, Brockley and six, Shapwick Heath, S; five, Charterhouse, May 29 and one, Compton Bishop, S, June 25.

Cupido minimus Fuessly (Small Blue). Numerous, Uphill, June 3 and 18, same place, June 8 with a single on Aug. 19. Several noted, Worle, June 11.

Celastrina argiolus L. (Holly Blue). Widely recorded but in small numbers. Reported regularly from gardens in north Bristol.

Lysandra coridon Poda (Chalkhill Blue). Twelve, Uphill, Aug. 2; Brean Down, S, several dates Aug. with maximum of 17 on 19th; several, nr. Charterhouse, S, Aug. 27.

Aricia agestis Schiff. (Brown Argus). Several, Crook Peak, nr. Compton Bishop, S, May 28 and *c*. 50, Sand Point, same date; single, coastal dunes, Berrow, S, Sept. 19.

Pyrgus malvae L. (Grizzled Skipper). Goblin Combe, nr. Cleeve, May 20; several, Burrington Combe, nr. Burrington, May 25 and numerous on same date, Stinchcombe, G; six, Brockley Combe, nr. Brockley, May 27 and a single, Compton Bishop, June 25.

Erynnis tages L. (Dingy Skipper). Reported on May 27 from four localities - several, Stinchcombe, G; ten, Brockley Combe, nr. Brockley; several, Burrington Combe, nr. Burrington and one, Shapwick Heath, S. Four, Crook Peak, nr. Compton Bishop, S, May 28; six, Goblin Combe, nr. Cleeve, June 3 and four, Charterhouse, S, June 9.

MOTHS (Lepidoptera) by K.H. Poole

Another season of indifferent weather in 1978 has been reflected in the small number of records received - once again the only migrant noted was the Silver-Y. No doubt for the same reason records for the two species selected for special study were also very few. Only three were received for *Sphinx ligustri* (Privet Hawk) while *Abraxas sylvata* (Clouded Magpie) was only noted, at light, at Weston-s-Mare (CHSB). Searches in eight suitable localites produced no results for the latter species. Species marked * were noted at light and records refer to single specimens unless otherwise stated. Name are in accordance with Kloet and Hincks, *A check list of British Insects*, 1977.

Deilephila porcellus L. (Small Elephant Hawk). Larva, Charterhouse, S, Aug. 27 (RSC).

Habrosyne pyritoides Hufn. (Buff Arches). Westbury-on-Trym, Bristol, July 25 * (JFB).

Eriogaster lanestris L. (Small Eggar). Larvae, Weston-s-Mare (DM) and Congresbury, June, (GS).

Drepana cultraria Fab. (Barred Hook-tip). Two, Congresbury, Oct. 31 (BR) - a rather late date.

Spaelotis ravida Schiff. (Stout Dart). Berrow, S, July 25 (CSHB). There is only one previous, old, record for Somerset.

Apamea remissa Hb. (Dusky Brocade). Southmead, Bristol, June 20 (RHP).

Chilodes maritimus Tausch. (Silky Wainscot). Berrow, S, July 21, * (CHSB).

Stilbia anomala Haw. (The Anomalous). Priddy, S, Sept. 7, * (CHSB).

Amphipyra pyramidea L. (Copper Underwing). Congresbury, Aug. 18 to 29th, * (RWR).

Hemistola chrysoprasaria Esper. (Small Emerald). Westbury-on-Trym, July 25, * (JFB)

Lobophora halterata Hufn. (The Seraphim). Weston-s-Mare, May 27, (CHSB).

Epirrhoe galiata Schiff. (Galium Carpet). Weston-s-Mare, July 13, * (KHP).

Euphyia biangulata Hb. (Cloaked Carpet). Weston-s-Mare, July 24, * (KHP).

This would appear to be a first record for Weston - there are only a few old ones for Somerset.

Eupithecia linariata Schiff. (Toadflax Pug). Congresbury, Aug. 3, * (RWR).

Ectopsis consonaria Hb. (Square Spot). Weston-s-Mare in May (CSHB).

Hemistola chrysoprasaria Esper (Small Emerald). Westbury-on-Trym, July 25 (JFB).

Adscita statices L. (The Forester). Velvet Bottom, Charterhouse, June 30 (JFB).

Agriphila geniculea Haw. Henleaze, Bristol, in garden, Aug. 13 (JFB).

Pyrausta aurata Scop. Clifton, Bristol, Aug. 23 (JFB).

Micropteryx thunbergella Fabr. Durdham Down, Bristol, May 26 (JFB).

Further additions to the list for Congresbury (ST 438638) recorded by RWR, GS and BR are:

Deilephila elpenor L. (Elephant Hawk), *Pterostoma palpina* Cl. (Pale Prominent), *Cerura virrula* L. (Puss), *Orgyia antigua* L. (Vapourer), *Spilosoma lubricipeda* L. (White Ermine), *Diaphora mendica* Cl. (Muslin), *Eilema lurideola* Zinck. (Common Footman), *Acronycta psi* (Grey Dagger), *Axylia putris* L. (Flame), *Allophyes oxycanthae* (Green Bundled Crescent), *Oligia strigilis* Cl. (Marbled Minor). *Mesolygia literosa* Haw. (Rosy Minor), *M. furunculus* Schiff. (Cloaked Minor), *Cosmia trapezina* L. (Dun-bar), *Charamyea trigammica* Hufn. (Treble Lines), *Xylocampa areola* Esp. (Early Grey), *Plusia festucae* L. (Gold Spot), *Diachrysia chrysitis* (Burnished Brass), *Hemistola chrysoprasaria* Esp. (Small Emerald), *Scopula floslactata* Hb (Cream Wave), *Cidaria fulvata* Forst. (Barred Yellow), *Chloroclysta citrata* L. (Dark Marbled Carpet), *Epirrhoe alternata* Müll. (Common Carpet), *Colostygia pectinataria* Knoch (Green Carpet), *Asthena albulata* Hufn. (Small White Wave), *Eupithecia vulgata* Haw. (Common Pug), *E. icterata* Vill. (Tawny Speckled Pug), *Horisme tersata* Schiff. (The Fern), *Ligdia adustata* Schiff.

BEETLES (Coleoptera) by R.W. Rowe

Although the number of observers supplying information for this section was not large those reports received indicate that the weather experienced during 1978 did not have much affect on either the number of insects seen or their variety. I am particularly indebted to Mr R.S. Cropper of Burnham-on-Sea for a most comprehensive report covering many different areas of Somerset, Avon and Gloucestershire and also to Dr K.W. Miller of Claverham, Dr M.L. Luff of

Newcastle-on-Tyne University and Mr J. Muggleton of Staines for determining species sent to them for examination.

Undoubted pride of place must go to the specimen of *Adalia bipunctata* var. *simulatrix* taken at Congresbury, the second record for the British Isles. Whereas *Staphylinus olens* Mull. was fairly commonly found the other species chosen for special observations, *Clytus arietis* L., was mostly conspicuous by its absence. The note on the *Coccinellidae* (Ladybirds) was supplied by Dr K.W. Miller.

The nomenclature followed is that of Kloet and Hincks *A Check List of British Insects*, Second Edition, Part 3, 1977.

Eurynebria complanata L. Three beneath driftwood, Burnham-on-Sea, S, July 30 (RSC).

Elaphrus uliginosus Fab. Edge of rhine, Catcott Heath, S, May 14 (RSC).

Bembidion pallidipenne Ill. Beneath seaweed on dunes Berrow, S, May 27 (RSC).

Bembidion lunulatum Fourc. Garden of house Congresbury, April 2, and also 15th (RWR).

Pterostichus anthricinus Pz. In soil, Congresbury, April 29 (RWR).

Amara nitida Stm. Brean Down, S, July 2 (RSC).

Dromium meridionalis Dej. Landed on roof of car, Congresbury, May 3 (RWR).

Hygrobia hermanni Fab. Lox Yeo River below Crook Peak, S, May 28 (RSC). Two, River Yeo, Congresbury, Nov. 4 (RSC).

Rhantus suturalis Macleay. Three, Meare Heath, S, Oct. 21 (RSC).

Colon brunneum Latr. Goblin Combe, Oct. 1 (RSC).

Thanisimus formicarius L. On wall of house, Congresbury, May 20 (RWR).

Endomycus coccineus L. On Greater Bindweed (*Convolvulus sepium*), Leigh Woods, Bristol, Aug. 19, (JFB).

Tenebrio molitor L. In roof space of house, Henleaze, Bristol, Jan. 7 (RHP).

Melolontha melolontha L. Berrow, S, June 4 (RSC) and Congresbury, on old railway line, June 9 (GS).

Clytus arietus L. Worle Hill, Weston-s-Mare, June 11 (RSC) and Priest Wood, nr. Cromhall, June 18 (RHP).

Cionus alauda Hbst. Two on Common Figwort (*Scrophularia nodosa*), Tortworth Park, nr. Charfield, June 15, (RSC).

Gymnetron labile Hbst. Several on Kidney Vetch (*Anthyllis vulneria*), Worle Hill, Weston-s-Mare, June 11 (RSC). Wilson, in his *Coleoptera of Somerset*, 1958, states that the food is not known.

Attagenus pellio L. Several found in house, Westbury-on-Trym, Bristol, April 5 (MP). This beetle feeds on dried animal matter particularly skins and furs.

Coccinellidae:

The Eyed Ladybird (*Anatis ocellata* L.) one of the two selected species was not recorded but a number of the commoner Two-Spot Ladybird (*Adalia bipunctata* L.) were reported including the very interesting and rare var. *simulatrix*, taken by R.W. Rowe to whom I am indebted for the following account.

Adalia bipunctata var. *simulatrix*. Swept from grass at night beside the old railway line, Congresbury June 8. Identified by J. Muggleton of Staines who reports that this is only the second record for the British Isles, the first being from Yorkshire in 1977. Occurs in parts of the Mediterranean, the Near East and Central Asia where the majority of *bipunctata* populations may be of this form.

Once again any ladybird records will be of interest and perhaps a special look-out could be kept for the Eleven-spot (*Coccinella undecimpunctata* L.).

DAMSELFLIES AND DRAGONFLIES (Odonata) by A.R. Nichols

Records received of sightings of *Odonata* for 1978 were more than double that for the previous year. Of the 16 species noted two were not reported in 1977 whilst three found in that year were not found in 1978. Both the scientific and vernacular names follow those given in the check list included in *The Dragonflies of Great Britain and Ireland* by Cyril O. Hammond (1977) and published by Curwen Books.

Platycnemis pennipes Pallas (White-legged Damselfly). Several, Shapwick Heath, nr. Shapwick, S, and Walton Hill, Street, S, in May (ARN).

Coenagrion puella L. (Azure Damselfly). Noted in over 20 localities from third week of May.

Enallagma cyathigerum Charpentier (Common Blue Damselfly). May: Berrow, S, (RSC) and several, Shapwick Heath, S, (ANC). Several, Priddy Pools, Mendip, S, July and Charterhouse, S, May (RSC).

Pyrrosoma numphula Sulzer (Large Red Damselfly). May: Walton Moor, Walton-in-Gordano (RSC), Berrow, S, (RSC), a few, Shapwick Heath, S, (ARN) and two, Walton Hill, Street, S (ARN). Eastwood Park, Falfield (ARN) and Shapwick Heath, S, (RSC) in July; Catcott Heath, S, (RSC) and four, Eastwood Park, Falfield (ARN) in Aug.

Ischnura elegans van der Linden (Blue-tailed Damselfly). Reported from over twenty localities, the first noted, Berrow, S, May 21.

Lestes sponsa Hansemann (Emerald Damselfly). Several, Priddy Pools, Mendip, S, July).

Agrion splendens Harris (Banded Demoiselle). Several, Claverton, Aug. (RSC).

Agrion virgo L. (Beautiful Demoiselle). Hambrook, July (JFB).

Aeshna cyanea L. (Southern Hawker). Street Heath, between Mere and Street, S, in July (RSC); also noted, same month, four, Leigh Woods, Bristol (JFB) and single, Cadbury Hill, Yatton (RSC); single, Henleaze, Bristol (JFB). August records included several, Kenn, (RSC) and one, Eastwood Park, Falfield (ARN). One in garden, Henleaze, Bristol, Sept. 4 (RHP).

Aeshna grandis L. (Brown Hawker). Single, Henleaze, Bristol, July (JFB) and Dodington Park Lake, Dodington, Sept. 24 (RHP).

Aeshna juncea L. (Common Hawker). Two, Charterhouse, S, and a single, Ashcott Heath, Ashcott, S, (RSC) in Aug.

Anax imperator Leach (Emperor Dragonfly). Walton Moor, Walton-in-Gordano, in May (RSC); two, Kenn Moor, Kenn (RSC) and two, Eastwood Park, Falfield in Aug. (ARN).

Orthetrum cancellatum Fab. (Black-tailed Skimmer). Many, Gordano Valley, nr. Clevedon, in June (RSC).

Libellul depressa L. (Broad-bodied Chaser). Several, Shapwick Heath, S, May (ARN) and June (RSC). Also seen Wick St. Lawrence, June (RSC).

Libellula quadrimaculata L. (Four-spotted Chaser). Several, Shapwick Heath, S, in June also Priddy Pools, Mendip, S, and Chilton Moor, nr. Chilton-upon-Polden, S, July (RSC).

Sympetrum striolatum Charpentier (Common Darter). Henleaze, Bristol, July (JFB): three, Eastwood Park, nr. Falfield, (ARN) abundant, Kenn Moor, Kenn and Charterhouse, Mendip, S, in August (RSC). Sept. records include singles at Dodington (RHP), Nailsea and Uphill (RSC).

CRICKETS AND GRASSHOPPERS (Orthoptera) by K.W. Miller

As with many other groups, 1978 was a poor year for Orthoptera, while the indifferent weather did little to encourage field work. No new species were recorded from Avon or the neighbouring parts of Somerset or Gloucestershire although a number of records of common species were received. These are always worth having and it is hoped that members will continue to send in such records so that in a year or two we will be able to produce a tetrad (2 x 2 km squares) distribution map of these interesting insects in Avon.

Once again we hope to concentrate on two easily identifiable species so that as many non-specialists as possible can help. For 1979 these are the Great Green Bush Cricket (*Tettigonia viridissima* L.) the largest of our native orthoptera, most often to be found in coastal areas. They are often difficult to see but their presence is revealed by the very loud stridulation of the males which in warm weather may start half-way through the day and continue well into the night. Then, instead of the Dark Bush Cricket (*Pholidoptera griseoaptera* (Degeer)) which turned up over most of the area in 1978, the Oak Bush Cricket (*Meconema thalassinum* (Degeer)) will be the second selected species. This is a small pale-green bush cricket which often comes to light.

TRUE FLIES (Diptera) by R.H. Poulding

Like most of the species selected for special study, by the Section, the two diptera chosen, *Volucella pellucens* (*Surphidae*) and *Haematopota pluvialis* (*Tabanidae*), were scarce in 1978. The latter whose biting habits usually advertise its presence from June until September was notably absent from many suitable habitats. The following records are a small selection of the more interesting records received of species from a wide range of families. The scientific names used are those given in Kloet and Hincks, *A Check List of British Insects*, Second Edition, Pt. 5, 1975.

Haematopota pluvialis L. Gad Fly or Cleg (*Tabanidae* - Horse Flies). Gad Flies were exceptionally low in numbers this season with records from only three 10 km squares between June 11 and Aug. 19. Collected specimens were determined as *pluvialis* and not the similar *H. crassicornis*.

Hybomitra disinguenda Verrall. (Tabanidae). Male, Leigh Woods, nr. Bristol, July 15 (RHP).

Bicellaria vana Collin. (Empididae). Shapwick Heath, S, Sept. 19 (RMP) - not listed by Audcent in *Bristol Insect Fauna. Diptera. Proc. Bristol Nat. Soc.* 27 (2), 409-470, (1949).

Bombylius major L. (*Bombyliidae* - Bee Flies). Single specimens on blossom of Blackthorn (*Prunus spinosa*), Sea Mills, Bristol, several dates, April; three, Durdham Downs, Bristol, April 23 (RHP); one feeding on Red Campion (*Selene dioca*) and Bugle (*Ajuca reptans*), nr. Portbury, May 22 (JFB).

Volucella inflata F. (*Syrphidae* - Hover Flies). Male on blossom of Guelder Rose (*Viburum opulus*), June 10, Leigh Woods, nr. Bristol, - an uncommon species in Avon.

Volucella pellucens L. (*Syrphidae*). Recorded from six 10 km squares with ST 57 providing records from three localities. Maximum of eight, Leigh Woods, nr. Bristol, June 19, 29.

Volucella zonaria Poda (*Syrphidae*). Male on hogweed, Henleaze, Bristol, July 24 (JFB); freshly emerged female, blossom of blackberry and hogweed, Leigh Woods, nr. Bristol, Aug. 19; female on Golden Rod (*Solidago* sp.), Henleaze, Bristol, Aug. 28; single female on ivy blossom, Clifton, Bristol, Sept. 8 and two females, same place on 9th (RHP).

Sapromyza sexpunctata Meigen (*Lauxanidae*). On nettle leaf, East Harptree, Aug. 16 - a new record for Avon (RMP).

Paraclusia tigrina Fallen (*Clusidae*). East Harptree, Aug. 26. This is a 'picture-winged fly' usually associated with rotten wood but this specimen was found indoors - new record for Avon (RMP).

Athyroglossa glabra Meigen (*Ephydridae*). East Harptree, Oct. 15 - a new record for Avon (RMP).

SAWFLIES, BEES, WASPS, ANTS etc. (Hymenoptera) by G.R. Best

Symphita (Sawflies)

Pontanis vesicator Common, Portbury, May 22 (JFB).

Tenthredo mesomelas Ashton Park, nr. Bristol, July 6 (JFB).

Formicidae (Ants)

Lasius flavius (Yellow Lawn Ant) Nests, Church Hill and Wains Hill, Clevedon, May 20 (JFB).

Lasius niger (Garden Black Ant). Nests, Almondsbury (GRB).

Myrmica ruginodis (Red Ant) Almondsbury, (GRB).

Cynipidae (Gall wasps)

Cynips quercus-calicis. Galls on oak, Bury Hill, Whiteshill, July 15 (JFB).

Vespinae (Social wasps)

Vespula vulgaris (Common Wasp). Early spring record of queen on fence, Henleaze, Bristol, March 5.

Vespula norvegica (Norwegian Wasp). Deserted nest found in hedge supported on ivy, Henleaze, Bristol (RHP).

Apoidae (Bees)

Megachile centuncularis (Leaf Cutter Bee). Ladye Bay, Clevedon, Aug. 3 (KTB).

Andrena armata (Lawn Bee). Many nests, Ladye Bay, Clevedon (KTB).

Bombus lapidarius (Red-tailed Bumble Bee). Several queens, Westbury-on-Trym, Bristol, April 3, 4 (JFB) and Clevedon, May 20 (KTB); Leigh Woods, nr. Bristol, June 7 (RHP).

Bombus lucorum Noted, Ladye Bay, Clevedon, April-Aug. (KTB).

Bombus pascuorum (previously *agrorum*). Recorded from Ladye Bay, Clevedon (KTB), Westbury-on-Trym, Bristol (NJG) and Almondsbury (GRB).

Bombus terrestris(Buff-tailed Bumble Bee). At least 15 queens, Leigh Woods, nr. Bristol, April 8; three queens, river bank, Sea Mills, Bristol, April 18 and up to 50 on Blackthorn blossom (*Prunus spinosa*), same place, April 22 (RHP). Nest, Westbury-on-Trym, Bristol (NJG), and several, Long Ashton, July 3 (GRB).

TRUE BUGS (Hemiptera-Heteroptera) by R.S. Cropper

107 species were recorded from the Bristol District in 1978, some of the more interesting being detailed below.

Sciocoris cursitans Fab. Brean Down, S, March 19 and several seen subsequently. Several Purn Hill, Bleadon, S, May 20 and abundant, Crook Peak, nr. Loxton, S, May 28. This is a local species known only from six counties in southern England. Southwood and Leston (1959) state that the food plants are unknown, so it is interesting to record that one was observed at Crook Peak feeding on the flower head of Silver-Hair Grass (*Aira caryophyllea*).

Aelia acuminata L. Swept from grass, Uphill, May 20.

Rhopalus subrufus Gmel. On Wood Sage (*Teucrium scorodonia*), Keynsham, July 20.

Myrmus miriformis Fall. Plentiful amongst grass, Brean Down, Aug. 9.

Chorosoma schillingi Schum. Abundant amongst grass, Brean Down, Aug. 9. A very local species found mainly in coastal localities in S. and E. England.

Ischnodemus sabuleti Fall. Several, including some mating pairs amongst rank grass in saltmarsh, Berrow, S, Aug. 19. This is a very interesting find as this species until recently was confined to S.E. England, although it is known to be extending its range.

Physatocheilia dumetorum Herrich-Schaffer. Beaten from Hawthorn, Keynsham, May 16.

Orius laevigatus Fieb. Several in flower heads of Common Mullein (*Verbascum thapsus*), Sand Point, Aug. 13. A local species now recorded from six localities in V.C.6 (North Somerset).

Trigonotylus ruficornis Geoff. Abundant amongst grass, Syston Common, nr. Kingswood, Bristol, July 20.

Aphelocheirus aestivalis Fab. In fair numbers in the R. Chew, Compton Dando, Nov. 9.

Notonecta marmorea Fab. Two in pool, Charterhouse, S, Mar. 5, also abundant in brackish rhines, Uphill, Aug. 5 and Wick St. Lawrence, Aug. 10.

Corixa affinis Leach. Abundant in brackish rhine, Uphill, Aug. 5. This species, rare over the British Isles as a whole, is locally abundant on the coast of V.C.6.

Corixa panzeri Fieb. Clarken Combe round pond, Ashton Court, Bristol, Mar. 9.

Arctocorisa germari Fieb. Several in pool, Charterhouse, Mar. 5 and three in concrete pool, Weston-s-Mare, Dec. 10.

INTERTIDAL COMMUNITIES ON ROCKY SHORES IN THE SEVERN ESTUARY

by
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INTRODUCTION

In a series of papers entitled "Studies on the Biology of the Bristol Channel", Bassindale (e.g. 1941, 1942, 1943) and Purchon (e.g. 1938, 1948, 1957) examined the fauna of rocky shores in the area. Little detail of the zonation of species was given and information on algal distribution was minimal. The present study was undertaken in conjunction with others, on the Somerset coast (Crothers, 1976) and on the Welsh coast (Dr C. Mettam, pers. comm., Benson-Evans *et al.* 1974), to determine the overall patterns of vertical zonation shown by fauna and flora along the length of the Severn Estuary. Further information on ecology and distribution of the common seaweeds is given in Smith (1980) and a more detailed analysis of the factors influencing zonation is given in Little & Smith (in press).

METHODS

Nine shores from Sharpness to Brean Point (see Fig. 1) were surveyed between November, 1974 and May, 1975. The distribution and abundance of species was established by means of a transect from the upper shore to low water. Recordings were made at 1.0 and 0.5 m vertical intervals. Heights were referred to the height of low water and then related to Ordnance Datum by reference to the Admiralty Tide Tables. Abundance of species was assessed using the method of Crothers (1976). The transects were usually sited in comparable positions in terms of aspect, but this was not always possible because of the location of soft sediments. Degree of exposure was similar at the three lower stations, but was reduced in the upper reaches of the estuary.

RESULTS AND DISCUSSION

Figures 2 and 3 illustrate the abundance and position on the shore of 12 common intertidal rocky shore species. For convenience, all tidal levels are referred to O.D. It can be seen that the vertical tidal range is greatest at Aust and then diminishes towards the head of the estuary.

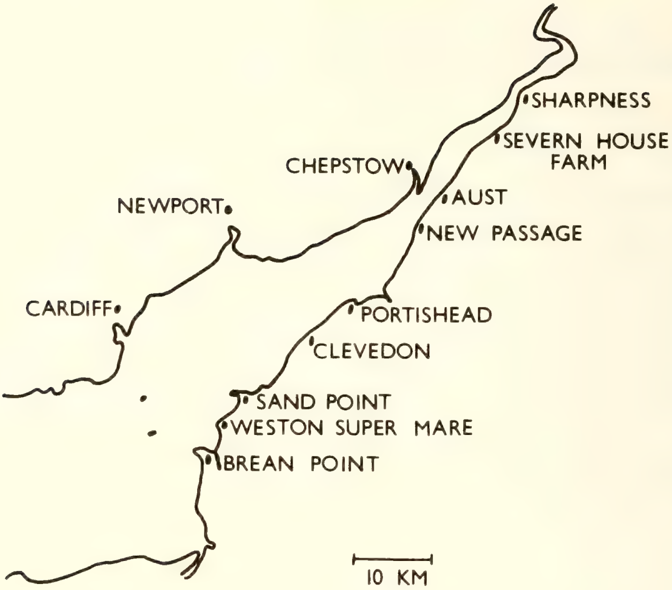
SHARPNESS
SEVERN HOUSE FARM
CHEPSTOW
AUST
NEWPORT
NEW PASSAGE
CARDIFF
PORTISHEAD
CLEVEDON
SAND POINT
WESTON SUPER MARE
BREAN POINT
10 KM

Fig. 1

Map of the Severn Estuary showing the location of experimental sites. Grid references of the nine sites - Sharpness SO 668029, Severn House Farm ST 638982, Aust ST 567899, New Passage ST 541863, Portishead ST 464776, Clevedon ST 408730, Sand Point ST 318659, Weston-Super-Mare ST 304626, Brean Point ST 280593.

Flora:-

With the exception of *Pelvetia canaliculata* and *Fucus serratus*, all the algae investigated occurred up to Sharpness. *Pelvetia* in fact occurred at Severn House Farm, but on boulders and not in the region of the transect. Towards the lower end of the estuary, *Fucus vesiculosus* was recorded as absent on the transects from Portishead to Brean Point. At these sites it was restricted to areas of less stable rock such as boulder/shingle outcrops, where it was not affected by shading of *Ascophyllum* (Smith, 1980, Little & Smith, in press).

The vertical range of the fucoid algae (*Ascophyllum*, *Fucus* spp., *Pelvetia*) was very variable and was, in general, greater than that on non-estuarine shores (Smith, 1980). Even though the vertical extent of the species was variable, a distinct zonation of algae into two communities was apparent on most of the shores. In the region of M.H.W.N. to M.H.W.S., the dominant species were the green algae *Enteromorpha intestinalis*, *E. prolifera*, *Blidingia minima* and *B. marginata*, and the fucoids *Fucus spiralis* and *Pelvetia canaliculata*, although at any one site all these species were not necessarily present. Between M.H.W.N. and M.L.W.N. the dominant species were *Ascophyllum nodosum*, *Fucus vesiculosus* and *Fucus serratus*. Although *Fucus serratus* sometimes extended below M.L.W.N., the shores at M.L.W.S. were almost devoid of macro-algae. This is presumably due to the effect of high turbidity which reduces light available for photosynthesis and to the scouring effect of the silt which interferes with the settlement of algal spores.

Fauna:-

All the animal species investigated occurred as far up the estuary as New Passage. Only *Littorina saxatilis* agg. occurred as far as Sharpness. In the upper estuary, all specimens in this species complex were *Littorina rudis* Maton. At Sand Point and below, *Littorina neglecta* Bean was found in the mid shore (see Little in prep. for details). The other species common in the upper estuary was the lower shore barnacle *Balanus improvisus* which is regarded as an estuarine species (see Boyden *et al.*, 1977). Most of the intertidal barnacle populations were made up of *Balanus balanoides* and *Elminius modestus*, but on a later occasion (6 September, 1978) a few specimens of *Chthamalus montagui* were found at M.H.W.N. at Sand Point (see Southward, 1976 for distribution and discussion of this species).

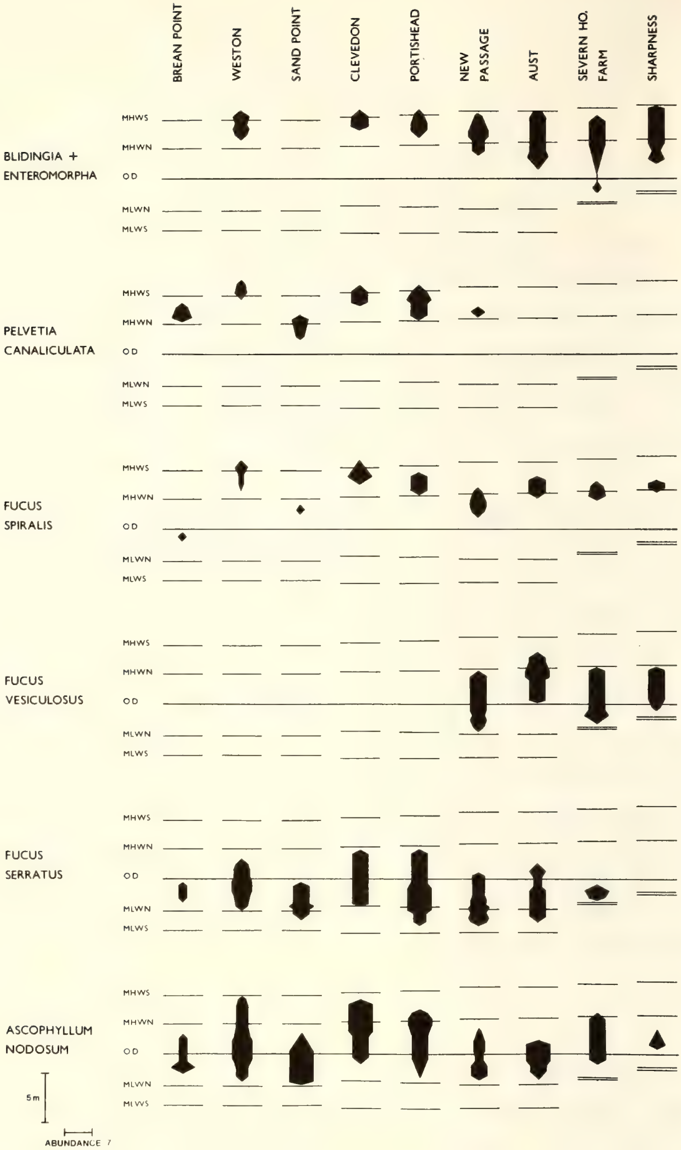

Fig. 2

Vertical distribution of common seaweeds at nine sites in the Severn Estuary. The abundance scale is that of Crothers (1976). Tidal heights were derived from the Admiralty Tide Tables, note that at Severn House Farm and Sharpness, the level of M.L.W.N. is below that of M.L.W.S. i.e. the positions of the two lines are reversed relative to those on the other shores.

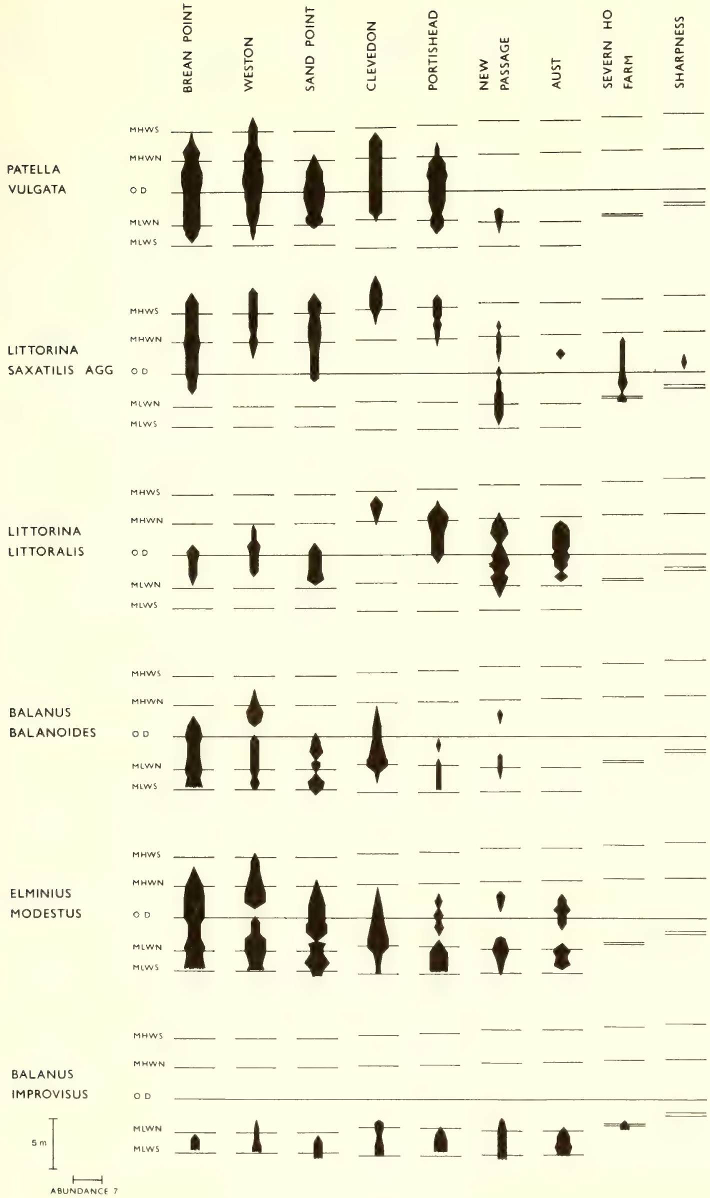

Fig. 3
Vertical distribution of common animals at nine sites in the Severn Estuary.

The fauna showed no obvious division into different communities which could be related to vertical height. Nor do the mobile gastropods *Patella vulgata* and *Littorina saxatilis* show any close correlation with the distribution of macro-algae. Since these species feed by rasping micro-algae directly off the rock surface, their distribution is more likely to be correlated with the occurrence of species of diatom. In areas not colonised by macro-algae, these diatoms form a visible golden brown film and at some seasons the grazing patterns made by *Patella* can be clearly seen. There appears to be a tendency for the upper vertical limits of both *Patella* and *Littorina saxatilis* to be lower on the shore in the upper estuary. This is probably related to increased desiccation on the upper shore due to the asymmetry of the tidal cycle. The distribution of *Littorina littoralis* was closely correlated with that of *Ascophyllum nodosum*. *L. littoralis* (L.) cannot be distinguished in the field from *Littorina mariae* Sacchi & Rastelli, but later dissections showed that *L. mariae* existed only at Brean Point. Here there was a population with orange, reticulated shells at M.L.W.N. (for discussion of this species see Sacchi & Rastelli, 1967). This species is characteristic of more exposed habitats, and Brean is undoubtedly the most exposed station considered in this survey.

It must be emphasised that the survey reported in this paper refers only to a limited time period. Over longer time scales it can be expected that changes in the distribution of species will occur and observations after the survey show this to be so. Some of the changes are due to physical factors such as salinity: in 1976, *Patella vulgata* formed a colony at Aust, presumably because of the lack of rain and penetration of sea water to the head of the estuary. Other changes are part of natural cycles, such as the diminution of *Ascophyllum* at Portishead, seen in 1977-1979: over a number of years this alga forms very long fronds and these become vulnerable to wave attack. Such long term changes and their causes are discussed in a further paper (Little & Smith, in press).

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THE DISTRIBUTION OF COMMON INTERTIDAL ROCKY SHORE ALGAE ALONG THE SOUTH COAST OF THE SEVERN ESTUARY

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Eleven rocky shore sites, between Kilve and Sharpness on the south shore of the Severn Estuary (see Fig. I), were visited regularly during 1975-1978 as part of a study on estuarine ecology by the author (Smith, 1978). As a result of these visits ecological notes were compiled for each intertidal alga found on the Severn shores. A selection of these are included in this paper to illustrate the distribution of each species along the estuarine coastline, the position of the alga on the rocky shores and other points of ecological interest.

A particularly striking feature of all the rocky shores studied is that they lack a subtidal zone of vegetation and the intertidal algal zone does not extend below the limit of M.L.W.S. On visiting any of the estuarine sites during the low water period, there is a conspicuous 'bare zone' above low water mark which is devoid of any macro-algae. Apart from this anomaly the zonation of the intertidal algae on the rocky shores follows the pattern generally found, with *Pelvetia canaliculata* and *Fucus spiralis* at the top of the shore and *Fucus serratus* and *Ascophyllum nodosum* extending from mid to lower shore. There are also two distinct communities or zones of vegetation on most of the shores (see Smith & Little, 1980). The vertical range of the fucoid algae on the Severn shores is extremely variable and is in general greater than that on non-estuarine shores. The increased vertical range of species on estuarine shores has also been observed by Den Hartog (1971) and Crothers (1976).

Table 1 shows the distribution of algae commonly found on the eleven shores studied; however it is not a complete list of the species to be found at each site. The red algae are the most variable in their occurrence along the coast and the green and brown algae are more widely distributed, each reaching similar upstream limits. Ladye Point is the upstream limit of *Callithamnion hookeri, Polysiphonia lanosa, P. denudata* and *Corallina officinalis,* while Aust is the limit of *Ceramium rubrum* and *Porphyra umbilicalis.* The majority of the green and brown algae occur up to Severn House Farm above which the occurrence of species is limited. Apart from the green algae, none of the other macro-algae are to be found upstream of Sharpness on the south bank of the Severn.

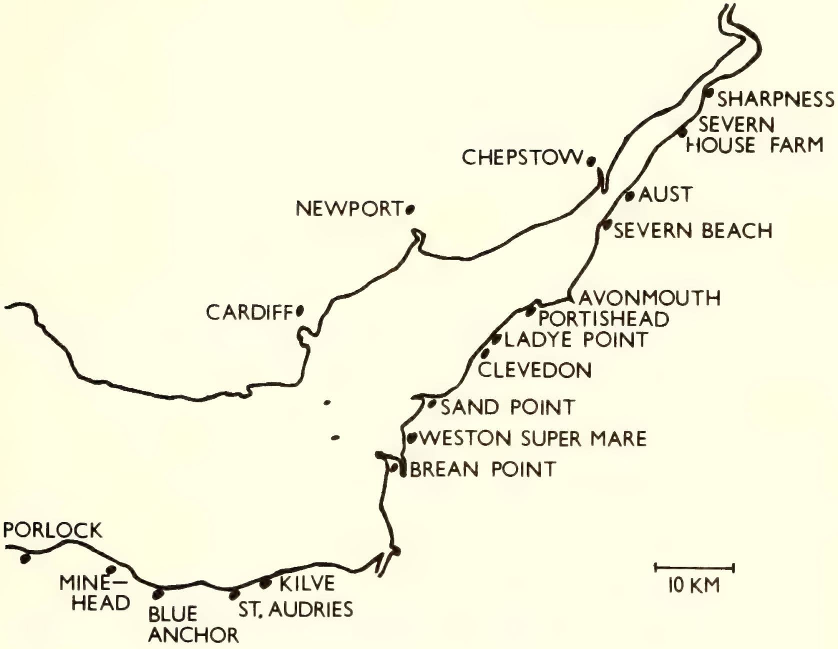
The distribution of the macro-algae within the area studied appears to be as variable as the vertical extent of the species on each rocky shore. There

SITE	SH	SHF	AU	SB	PH	LP	CL	SP	WSM	BP	K
SPECIES											
Green algae:-											
Enteromorpha intestinalis	X	X	X	X	X	X	X	X	X	X	X
Ulva lactuca		X	X	X	X	X	X	X	X	X	X
Brown algae:-											
Ascophyllum nodosum	X	X	X	X	X	X	X	X	X	X	X
Fucus serratus		X	X	X	X	X	X	X	X	X	X
Fucus spiralis	X	X	X	X	X	X	X	X	X	X	X
Fucus vesiculosus	X	X	X	X	X	X	X	X	X	X	X
Pelvetia canaliculata		X		X	X	X	X	X	X	X	X
Pilayella littoralis			X	X	X	X	X	X	X	X	X
Red algae:-											
Audouinella purpurea					X	X	X	X	X	X	
Callithamnion hookeri						X	X		X	X	X
Catenella caespitosa		X			X	X	X	X	X	X	X
Ceramium rubrum			X	X				X	X	X	
Chondrus crispus	X	X	X	X	X	X	X	X	X	X	X
Corallina officinalis						X		X	X	X	X
Polysiphonia denudata						X	X		X		X
Polysiphonia lanosa						X	X	X	X	X	X

Key to sites:-

SH	Sharpness	CL	Clevedon
SHF	Severn House Farm	SP	Sand Point
AU	Aust	WSM	Weston-super-Mare
SB	Severn Beach	BP	Brean Point
PH	Portishead	K	Kilve
LP	Ladye Point		

Table 1. Distribution of algae on eleven shores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SEVERN HOUSE FARM
CHEPSTOW
AUST
NEWPORT
SEVERN BEACH
AVONMOUTH
CARDIFF
PORTISHEAD
LADYE POINT
CLEVEDON
SAND POINT
WESTON SUPER MARE
BREAN POINT
PORLOCK
MINE-HEAD
BLUE ANCHOR
KILVE
ST. AUDRIES
10 KM

Fig. 1

Map of the Severn Estuary showing the location of sites where algal collections were made.

Three different regions of the estuary were recognised by Haderlie & Clark (1958):- i) upstream of Portishead (estuarine zone), ii) Portishead-Blue Anchor (transition zone), iii) seaward of Blue Anchor (marine zone).

Sites where Boyden & Little (1973) found significant changes in the soft sediment fauna were:- Sharpness, Sand Point, St. Audries, Minehead.

are no marked changes in species' occurrence and abundance along the estuary until Porlock where the subtidal vegetation occurs. It has not been possible, therefore, to divide the south shore of the estuary into regions comparable to those of Bassindale (1943), Haderlie & Clark (1958) and Boyden & Little (1973) as illustrated in Figure 1. Bassindale (1943) considered the mouth of the estuary to be at Avonmouth from studies on the fauna and salinity regime of the estuary. Haderlie & Clark (1958) recognised three different zones after studying the soft sediment fauna as well as the silt/salinity regime of the estuary. The zones of Boyden & Little (1973) were also based on studies on the fauna of soft sediments.

There is as yet very little information on the factors which influence the distribution of marine algae, but from my study of the Severn Estuary I conclude that biological interaction on the shore is of primary importance in influencing the distribution of the algae. Environmental factors probably have a secondary effect.

Ecological notes on common intertidal algae of the Severn Estuary:-

A) Green algae (Chlorophyta)

ENTEROMORPHA INTESTINALIS (L.) Link

Found on all the rocky shores, usually above mid tide level but the actual position varies between sites. It is normally found growing in crevices or situations which remain moist during the intertidal period and also in rock pools, where it is a frequent epiphyte of *Fucus* spp.

ULVA LACTUCA L.

At all sites from Severn House Farm to Kilve, occurring most frequently in the mid to lower shore zone. It is often found at the lower limit of the fucoid zone, forming a conspicuous border to the intertidal algal zone. It also occurs in rock pools, being particularly tolerant of very silty pools. Prolific growth of the alga is often found near to sewage outlets. The form and size of the thallus is extremely variable, the larger palmate forms are normally found in rock pools.

B) Brown algae (Phaeophyta)

ASCOPHYLLUM NODOSUM (L.) Le Jolis

Occurs at all the sites from Sharpness to Kilve, its position on the shore varies with location in the estuary but it is found most frequently between M.H.W.N. and M.L.W.N. Plants at the upper and lower limits of the *Ascophyllum* zone are often of a stunted form, less than 20 cm in length. At all sites between Ladye Point and Kilve, plants in the mid *Ascophyllum* zone support the epiphytic red alga *Polysiphonia lanosa*. This epiphyte does not occur upstream of Clevedon, possibly as a result of fluctuations in the salinity of the water, to which this species is susceptible (Burrows, 1948).

FUCUS SERRATUS L.

Grows at all the sites between Severn House Farm and Kilve, the extent of the species on the shore varies with location in the estuary. It occurs most frequently from below O.D. to just above M.L.W.S. being the dominant alga of the lower seaweed zone. On sheltered shores it may be found as high as M.H.W.N. e.g. at Kilve. Where the species is found in rock pools or in situations which remain damp during the intertidal period, epiphytes are commonly found, especially of *Ulva lactuca* and *Ceramium rubrum*. The stipes of *Fucus serratus* often support the epiphytic brown alga *Elachista fucicola* (Vell.) Aresch.

FUCUS SPIRALIS L.

All sites from Sharpness to Kilve. It occurs in varying positions on the shore from just below M.H.W.S. to below M.H.W.N., but normally never as low as O.D. It is often found higher up the shore on the more exposed rocky promontories, but at Sand Point and Brean Point it is absent from their extremities, being confined to the more landward regions.

FUCUS VESICULOSUS L.

At all sites from Sharpness to Kilve. The species is very variable in its extent on each of the shores, it occurs most frequently between M.H.W.N. and M.L.W.N. Between Clevedon and Kilve the species is found more frequently on the shingle/boulder outcrops than on firmer substrata. *Ascophyllum* is generally abundant on the latter type of substratum and the distribution of *F. vesiculosus* appears to be influenced by the dominance of *Ascophyllum*. The variety *F. vesiculosus* var. *evesiculosus* which lacks air vesicles is found frequently at the sites upstream of Avonmouth.

PELVETIA CANALICULATA (L.) Dcne et Thur.

Pelvetia occurs on shores from Severn House Farm to Kilve but often in restricted abundance. The species is absent from Aust whilst at Sand Point and Brean Point it is restricted to the more sheltered areas. The species is found at and above M.H.W.N. but usually below E.H.W.S. Its position on the shore varies with location in the estuary and it is the least abundant of the fucoid algae in the Severn Estuary.

PILAYELLA LITTORALIS (L.) Kjellm.

Found at all sites from Aust to Kilve, most frequently in rock pools of the mid and upper shore regions but also amongst mats of *Enteromorpha* on exposed rocks. It is not usually found during the winter months, occurring from early spring through to late October. In rock pools it is a common epiphyte of *Fucus* spp. At Aust it is abundant in areas constantly affected by drainage of large pools during the low water period, these areas are also covered by a dense growth of *Ulva lactuca*.

C) Red algae (Rhodophyta)

AUDOUINELLA PURPUREA (Lightf.) Woelkerling (= *Rhodochorton purpureum* [Lightf]. Rosenv.)

Found at all the sites from Portishead to Kilve where it occurs in crevices or on the undersides of overhanging rocks in the upper shore region above M.H.W.N., usually between M.H.W.S. and E.H.W.S. The species forms conspicuous purple-pink velvety patches on rocks at the entrance to caves, in crevices and other shady situations. The tufts are normally 2-5 mm high and are firmly attached to the substratum (often a fine deposit of sand on the rock). The only epiphyte occasionally found on the alga was the blue-green alga *Entophysalis conferta* (Kütz.) Dr. et D.

CALLITHAMNION HOOKERI (Dillw.) S.F. Gray

Callithamnion grows at Ladye Point, Clevedon, Weston-super-Mare, Brean Point and Kilve. It is found in crevices, on the undersides of overhanging rocks and in shady places between O.D. and M.H.W.N., occasionally higher up the shore. It can tolerate muddy situations such as occur in rock crevices but otherwise forms fairly conspicuous bright pink colonies on the rocks. It is often found among mats of *Polysiphonia denudata, Catenella caespitosa, Ceramium* spp. or *Pilayella littoralis.* The species varies in its morphology during the year, in winter it appears in stunted form having shed many of its lateral branches. New frondage grows in spring and early summer but the range in frond size, 1-3.5 cm, is very much less than that normally attained in a non-estuarine situation.

CATENELLA CAESPITOSA (With.) Dixon et L. Irvine

Catenella occurs at Severn House Farm and at all the sites from Portishead to Kilve. It is usually found on the shore between M.H.W.N. and M.H.W.S. but it can occur at and above E.H.W.S. on the more exposed shores. It grows on sea walls, in crevices and on the underside of overhanging rocks, sheltered or shady situations. The species forms dense mats amongst which the green algae *Rhizoclonium* sp. and *Blidingia* sp. are found frequently. The fronds of *Catenella* are often covered with colonies of the blue-green alga *Entophysalis conferta.*

CERAMIUM RUBRUM Roth

This species was collected from Aust, Severn Beach, Sand Point, Weston-super-Mare and Brean Point where it was found in rock pools of the mid to lower shore region. *Ceramium rubrum* is the most abundant of the *Ceramium* species in the estuary and is often found as an epiphyte on *Chondrus crispus, Fucus* spp. and *Polysiphona nigrescens* (Huds.) Grev. The alga varies considerably in length, commonly 4-10 cm long it may reach as much as 14-16 cm in silt free situations.

CHONDRUS CRISPUS Stackhouse

The species is found at all sites from Sharpness to Kilve. It is usually found growing in rock pools of the mid to lower shore region, occasionally in damp crevices or under fucoids. It was not usually found in situations where large amounts of silt are deposited by the ebb tide. The morphology of the species varies between and within sites in the estuary. Plants with broad fronds and forming relatively dense tufts were often found in pools with a low silt content, whilst the shorter tufts bearing the narrow type of frond were often associated with silty or exposed situations. The narrow type was the form in which the plants occurred at their upstream limit (Sharpness).

CORALLINA OFFICINALIS L.

Occurs at all sites between Ladye Point and Kilve in rock pools of the lower shore. At the upper estuarine sites the plants are very small, particularly at Ladye Point where they measured 1-3 cm in length. Species of *Ceramium* are often found as epiphytes of *Corallina*.

POLYSIPHONIA DENUDATA (Dillw.) Grev. ex Harv. in Hook.

Collected from Clevedon, Weston-super-Mare and Kilve from silt covered rocks and muddy crevices of the upper shore. This is an annual species occurring in muddy situations and amonst mats of other filamentous red algae e.g. *Ceramium* spp. and *Callithamnion hookeri*, in shady situations above mean tide level. The size of the plants varies according to the time of the year and position on the shore, but they range from 1-3 cm in length.

POLYSIPHONIA LANOSA (L.) Tandy

Collected at all sites from Ladye Point to Kilve where it occurs on *Ascophyllum nodosum* between M.H.W.N. and M.L.W.N. The species is always found as an epiphyte of *Ascophyllum*, generally occurring on the plants of the mid *Ascophyllum* zone. The densely tufted, dark red-brown plants are of variable size but are not normally longer than 4 cm. The blue-green alga *Entophysalis conferta* is frequently found as an epiphyte of *Polysiphonia lanosa*.

ACKNOWLEDGEMENTS

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1,654			
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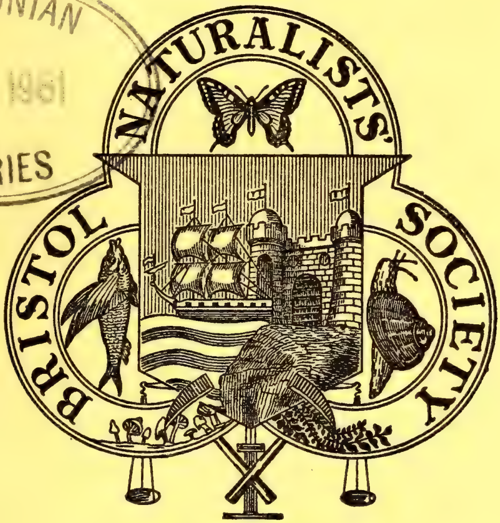

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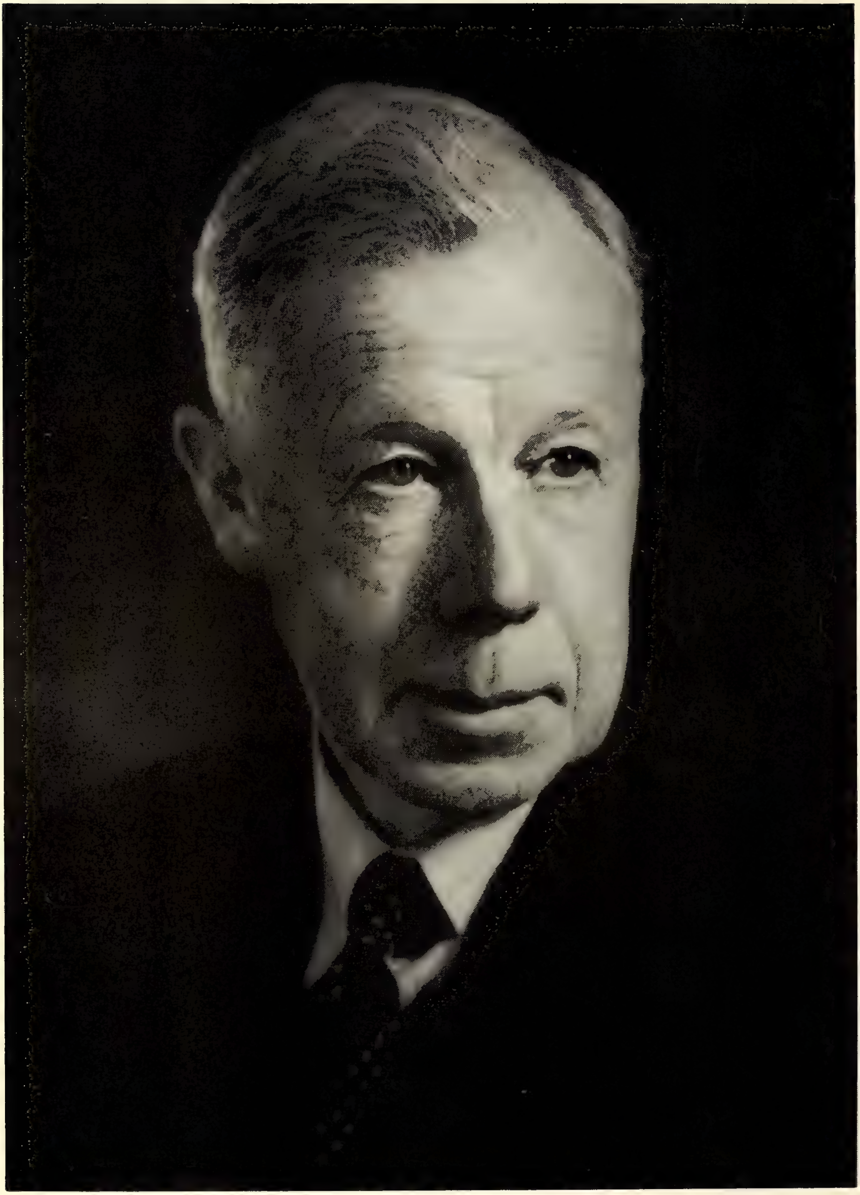

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Frontispiece : Dr. F.S. Wallis,
President, 1933-34

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At the annual Buffet Supper Mr. Robin Prytherech spoke on "Ascension Island."

The future of the junior section has been reviewed following a serious fall in numbers and support. The section has been suspended until a suitable leader is forthcoming. However, junior membership will be retained, and juniors will be welcome at all indoor meetings.

A working party was set up in 1978 to explore the possibility of the formation of a Trust for Nature Conservation in Avon. On its recommendation, the Joint Committee for Nature Conservation in Avon at the close of that year formally approved the formation of a Trust, after obtaining the approval of the Society for the Promotion of Nature Conservation, the Nature Conservancy Council, and the Somerset and Gloucestershire Trusts for Nature Conservation. The services of a team of graduates from the Special Temporary Employment Programme scheme were secured (a) to collate existing material on semi-natural habitats in Avon and to make any further surveys deemed necessary, with a view to deciding priorities for conservation purposes and the setting-up of nature reserves and interpretative sites (b) to undertake fund-raising and publicity drives essential to the formation of a Trust and (c) to set in motion the necessary legal preliminaries.

The Trust comes into being on 1.1.80, much of the initial work being completed by the end of 1979. Through the generous help of charitable bodies and local industries and businesses a substantial sum has been collected to start the Trust off with a balance in hand for payment of salaries and other expenses. The formal launching of the Trust is to be early May, 1980.

We record with regret the deaths of:

Mr. E. A. Bidwell

Dr. F. S. Wallace

REPORT OF THE BOTANICAL SECTION, 1979

At the Annual General Meeting in the Botany Department Herbarium on 22nd January, 1979 the following were elected:-

President: Dr. A.F. Devonshire; Secretary & Treasurer: Mr. A.L. Grenfell; Committee: Miss I.F. Gravestock, Dr. T.E.T. Bond, Mrs. N. Vaughan Davies, Mr. C.W. Hurfurt, Mr.P.J.M. Nethercott, Mrs. P.H. Royle, Mrs. T.B. Silcocks, Dr. M.C. Smith and Mr. C.M. Lovatt.

Miss Gravestock retired from the post of Secretary & Treasurer after a period of no less than 18 years.

The following winter meetings were held:-

January 22	Annual General Meeting and Members' Evening.
February 12	The Management of Woodland Nature Reserves, by Mr. J. Workman, OBE.
February 24	'Behind the Scenes' in the Bristol City Museum, led by Mrs. A. Hollowell.
March 17	Tropical & Sub-Tropical Plants at Bracken Hill, led by Dr. M.C. Smith.
March 26	Orchids of the West Country, by Mr. P.F. Hunt.
October 22	Plant Names, - English & Latin, by Dr. A.F. Devonshire.
November 26	Members' Evening, with transparencies.

The following field excursions took place, under the leadership of those shown:-

May 5	Knightshayes Gardens, Devon. Mrs. N. Vaughan Davies.
May 19	Hawkesbury Upton for woodland plants which included *Paris quadrifolia* and *Convallaria majalis*. Mrs. P.H. Royle.
June 1	Alien Hunt, Central Bristol. Mr. A.L. Grenfell.
June 30	Charterhouse for plants of the Roman lead mines. Mrs. T.B. Silcocks.
July 14	Oxford Botanic Garden. Mr. P.J.M. Nethercott.
July 25	Bristol Docks. Dr. A.F. Devonshire.
August 18	Keynsham - Hanham. A riverside walk during which *Catabrosa aquatica* and *Cuscuta europaea* were seen. Mr. C.W. Hurfurt.
September 1	Green Down & Watery Combe. Miss I.F. Gravestock.
September 23	Fungus Foray - Goblin Combe, joint meeting with Wrington Natural History Society. Dr. T.E.T. Bond.
September 29	Avonmouth Docks. Rare aliens included *Amaranthus spinosus*, *Iva xanthifolia* and *Modiola caroliniana*. Mr. A.L. Grenfell.

In addition to the above, evening meetings were held in the Avon Gorge on June 19, July 17 and August 14. Messrs. C.M. Lovatt & A.L. Grenfell.

A.L. Grenfell, *Hon. Secretary*.

REPORT OF ORNITHOLOGICAL SECTION, 1979

During the year 9 indoor meetings were held, with an average attendance of 50, and 28 Field Trips, though it proved possible to fill only one coach. The section participated in National Surveys including the overwintering Blackcap Survey, and the Nest Record Scheme. It attempted a trial survey of Magpies in Bristol, and Grey Wagtails in Avon, and completed a 3 year survey into Buntings in Avon. There were continuing surveys into the status of Shelduck, Kestrels in Bristol, and Birds in Gardens as well as a survey of the tidal Avon. A start was made on organising duck counts in North Avon, and the gull study group monitored local gull populations.

At the 55th AGM, held on January 24th, 1979, Mrs. J. Humphris was elected President, R.L. Bland was elected Secretary, and S.M. Taylor, Assistant Secretary. H. Rose was elected Treasurer. S. Hammacott, R. Chadwick, E. Harris and P. Farner all retired from the committee, and P. Chadwick, B. Gray and H.S. Walker were elected to it for the first time. Re-elected were P. Carter, W. Biggs, J. Burton and T. Evans.

Please note that the 1976 Ornithological Section Report refers to the 53rd AGM, which took place in 1977, and the 52nd AGM, at which R.G. Thomas was elected President for the first time, has been omitted from the record.

R.L. BLAND, Hon. Secretary.

REPORT OF MAMMAL SECTION, 1979

At the Annual General Meeting the following officers were elected:- President: Mr. R.A. Burberry; Joint Secretary/Treasurers: Mrs. C. Kitchen and Mr. M.A.R. Kitchen; Mammal Recorder: Mr. A.F. Jayne; Committee Members: Miss J. Haskins, Miss E.J. Lenton, Mr. J. Grant, Mr. M. Chapman.

6 indoor meetings were held:-

January 16: AGM and Members' Evening.
February 13: Amphibians: Mr. M. Linley.
March 13: Mammal Workshop. Mr. Burberry.
October 9: Small Mammals as Prey. Mr. A.F. Jayne.
November 9: The Otter in England. Miss E.J. Lenton.
December 11: Small Mammals in Arable Fields. Mr. P. Sayers.

The following field meetings were held:-

January 21: Country Fox Spotting. Miss E. J. Lenton.
January 28: Town Fox Spotting. Mr. M.A.R. Kitchen.
February 25: Bottle Survey. Mr. A.F. Jayne.
March 18: Dolebury Warren. Mr. M. Chapman.
April 22: Silkwood. Mr. A.F. Jayne.
May 20: Ashton Court Park. Mr. R. Surch.
June 17: Early morning walk in Leigh Woods. Mr. R.A. Burberry.
July 1: Wrington Hill and Goblin Coombe. Mr. G. Walker.
August 19: Tickenham Ridge. Mr. M.A.R. Kitchen.
September 2: Quantocks. Mr. R.A. Burberry.
October 7: Deer Rut at Ashton Park. Mrs. C. Kitchen.
October 21: Harvest Mouse Search. Mr. A.F. Jayne.
November 11: Riverside Walk. Miss E.J. Lenton.
December 9: Bottle Survey. Mr. W. Chapman.

The mammal recording scheme has continued with good participation from members. Although the section records amphibians and reptiles, the number of records of these animals received is generally always somewhat on the low side, possibly due to a lack of awareness by members of this aspect of the section's activities.

C. KITCHEN
M.A.R. KITCHEN Hon. Secretaries

REPORT OF GEOLOGICAL SECTION, 1979

The Annual General Meeting of the Section took place on 11th January, 1979, in the Geology Lecture Theatre, Queen's Building and the following were elected:-

President: Mr. V. Dennison; Vice-President: Mr. N. Hollingsworth; Secretary and Treasurer: Miss C.J. Mayle; Field Secretary: Dr. D. Hamilton;

Ex officio: Professor D.L. Dinely; President of the Student Geol. Section;

Members:- Mr. T. Harrison, Miss E. Pounder, Mr. P. Thompson, Mrs. G. Hamilton, Mr. A.E. Frey, Dr. A. B. Hawkins, Mr. A. Mattheison, Mr. J. Toller.

The winter programme included:-

January 11:	Annual General Meeting and Presidential address: The Holford Stream - a geomorophological oddity. Mr. V. Dennison
February 15:	The North Sea Basin. Dr. S.C. Matthews.
March 10:	Visit to the Geology Section in the Bristol Museum. Conducted by the staff of the Museum.
March 15:	The Lower Mesozoic rocks of the West Country. Dr. A. Whittaker.
October 18:	Fossils and their environment. Dr. P. Hardy.
November 22:	Base of the Cambrian in China and Siberia. Dr. J. Cowie.

Field outings:-

April 22:	Volcanic rocks of the Weston-Super-Mare area (with W.E.G.A.). Dr. D.L. Speedyman.
May 9:	Building stones of the Clifton area. Dr. R.J.G. Savage. (Evening Walk).
July 8:	Blacknore to Redcliffe Bay. Mrs. Maureen Milton. Survey of Quarry at Goblin Coombe. (Morning).
July 15:	Minerals of the Bristol District (with W.E.G.A.). Mr. I.H. Ford and Mr. C.J. Alabaster.
September 23:	Crowcoombe to Kilve. Mr. V. Dennison.

Miss C.J. Mayle, Hon. Secretary.

REPORT OF THE LIBRARIAN, 1979

There are now 72 members registered as readers in the Society's Library. During the year, 132 visits were recorded, and 41 readers borrowed over 240 items. An Open Evening on May 15th attracted six new visitors.

Additions to the Library included 27 books and a number of back issues of journals. A subscription was taken out to the Entomologists' Gazette. We are grateful to all who have donated material, including Mrs. N. Vaughan-Davies and Mr. S.M. Taylor.

The members of the Library Committee have again provided valuable assistance. Mr. Taylor has continued the checking of the Ornithological Section. Mrs. Gray has boxed and labelled a number of journals. In particular I would like to thank Mr. Nethercott for assembling albums of the Society's Proceedings (1st Series) and a complete set of "Bristol Botany". He has also sorted all the back issues of the Proceedings, finding 20 parts completely out of print since 1874.

We acknowledge our gratitude to the Director of the City Museum and to the Librarian of the University of Bristol for providing us with accommodation and storage space.

JENNIFER SCHERR, Hon. Librarian.

ACCOUNT OF GENERAL MEETINGS, 1979

January 18th.	Presidential Address: "Sea Shells in Art & Architecture".
February 8th.	"A Year in the LIfe of a Deer" - speaker Mr. M. Hill.
March 8th.	"The Making of a Natural History Film" - speaker Mr. M. Rhodes.
October 4th.	"Ireland Adventures" by Mr. J. Eatough.
November 8th.	Members' Evening: "Natural History of Towns & Cities".
December 6th.	"Seeing thro' the Sea" by Dr. J. Lythgoe.

GENERAL FIELD MEETINGS, 1979

Fourteen field meetings were held, and were generally well attended; at four there were more than 50 members. Two, however, had to be cancelled through lack of support; one cancellation (in January) was due to the severe winter. A list of the meetings with leaders, and an indication of things seen is given below. A fuller account is kept in the records of the Field Committee. In the following list the leader is given first, followed by the area visited.

13 April	H.G. Hockey. Hornsbury Mill and Museum near Chard; Seaton and a tram-ride along the bank of the Axe, where herons and other water-birds were seen. Axmouth harbour.
25 April	Miss J. Cox. Afternoon walk in Leigh Woods. Trees and other plants.
13 May	H.G. Hockey. Wimbleball reservoir; Brendon Hills. A walk through the oakwoods surrounding the new reservoir. Waterfowl.
22 May	Mrs. V.J. Kenney. An afternoon walk from Bristol Castle to Evans Park. Plants.
5 June	R.M. Curber. College Park at Newton St. Loe. Evening. Trees and garden plants; a heronry and waterfowl.
23 June	Miss R.C. Lee. Brownsea Island. The island is covered with pines, with marshes and lagoons on the north, where waterfowl were seen. Signs of red squirrel were also seen.
7 July	Miss C. Groves. Cricket St. Thomas Wild Life Park for mammals and birds. Tintinhull for garden shrubs and trees.
11 July	Dr. A.F. Devonshire. Bristol Castle. An evening walk. Historic buildings and plants.
18 July	Miss C. Groves. Clevedon Court. The party visited the house and gardens.
1 August	Miss R.C. Lee. A walk along the Berkeley canal from Purton to Slimbridge. Water plants and birds.
7 August	Dr. A.F. Devonshire. A visit to the University Botanic Garden which has a fine collection of native and foreign plants.
11 August	Miss J. Cox. Kew Gardens. After visiting the Queen's Garden the party divided to see the rest of the gardens.
9 September	Mr. John Bingham (Worcester Field Club). Wyre Forest, near Beudley. An ancient forest, mainly oak.
27 October	Miss R.C. Lee. A walk at Heaven's Gate (near Longleat) for trees and fungi, and a visit to Stourhead Garden, which has a magnificent collection of trees.

A.F. DEVONSHIRE Hon. Field Secretary.

Accounts for the year ended 31 December 1979

1978		£	£
	Members' Subscriptions		
1486	Full members	1,731.00	
121	Full Members of the same household	154.75	
34	Corresponding Members	31.25	
20	Associates	24.00	
21	Juniors	20.25	
20	Affiliated Societies	28.25	1,989.50
1702			
1	Donations		5.50
105	Proceedings		
	Grants	45.00	
	Sales	110.26	155.26
9	Sale of journals and books		16.91
29	Field Committee : profit		30.57
15	Buffet Supper : Profit		12.50
79	Interest on deposit account		147.33
2	Interest from National Savings Bank		2.35
36	Interest on Bonds		36.00
21	Members contributions to the Harry Savory Illustrations Fund		30.75
-	Members' Contributions to the Conservation Appeal		36.00
1	Advertisement		-
2	Overpaid subscription		2.00
2196	Balance from last account		1,982.57
£4,198			£4,447.24

P. J. M. Nethercott
Hon. Treasurer
23rd April 1980.

1978		£	£
613	General Printing and Stationery	615.96	
432	Postages and telephone	401.35	1,017.31
805	Proceedings (1977)		890.00
86	Books	165.60	
67	Subscriptions for journals etc.	94.10	
10	Replacement of lost journals	4.76	
-	Binding	32.50	
10	Fire Insurance (Library)	9.57	
4	Library stationery	-	306.53
16	Contributions to Council for Nature, S.W.N.U. etc.		17.85
8	Expenses of general indoor meetings		12.96
165	Grants to Sections :		
	Botanical	10.00	
	Mammal	40.00	
	Ornithological	60.00	
	Geological	40.00	
	Entomological	25.00	175.00
-	Refund of overpaid subscriptions		4.00
	Balances to next account :		
88	Cash in bank, current account	149.41	
1382	Cash in bank, deposit account	1,329.38	
48	Deposit in National Savings Bank	50.30	
400	*£400 8½% & 9½% British Savings Bonds	400.00	
64	In hands of Field Committee	94.50	2,023.59
£4,198			£4,447.24

*Including the Harry Savory Illustrations Fund of £188.69.

Notes: (1) These accounts do not record balances held by sectional treasurers and the Ornithological Section Special Fund of £155.86

(2) The cost of the 1978 Proceedings, amount not known, is an outstanding liability.

Audited and found correct.
T. B. Silcocks
26 May 1980.

Dr. F. S. WALLIS

1895-1979

Dr. Frederick Stretton Wallis, past President of the Society, former Director of the Bristol City Museum and Lecturer in Geology at Bristol University, died at the age of 84 on 9 March 1979.

Dr. Wallis was very much a Bristolian. He was born in the city and schooled at Fairfield Secondary School (as it was then known). From there in 1912 he entered Bristol University to read Geology. His studies were interrupted by the First World War; he joined the Royal Flying Corps and saw service in France and the Middle East. After the war he returned to his studies and graduated with First Class Honours in 1920. To this he added an M.Sc. in 1921, Ph.D. in 1923 and D.Sc. in 1930.

In 1920 Wallis joined the staff of Bristol City Museum as Assistant curator in Geology, rising through the posts of Curator and Deputy Director until in 1945 he was appointed Director of the Museum. He also kept up his interests and contacts with the University; he was appointed Assistant Lecturer in Geology in 1922, and later carried the title of Special Lecturer in Sedimentary Petrology. On his retirement from the University and the City Museum in 1960 he became Curator of the Torquay Natural History Museum, and later Curator of the Wells Museum.

Dr. Wallis was a very active member of the Society for almost 60 years. He joined in 1920 and almost immediately became its Secretary and Treasurer of the Geology section. He retained the secretaryship until 1933 when he was elected the Society's President, coupling with it secretaryship of the Geology Section and presidency of the Field Section. He was a Society Vice-President in 1935, president of the Geology Section in 1944 and 1945, and was elected an Honorary Member in 1960. At his death he was the Society's senior member. This list of offices gives only a hint of the devoted service Dr. Wallis gave to the Society.

He was a key figure in achieving the affiliation of the Bristol Field Club with the Society which has operated within the Society since 1927 as the Field Section. He organised innumerable field excursions for the Society and gave many lectures to the members. Dr. Wallis always had a great enthusiasm for communicating his geology, especially to the young. He found time from his Museum duties to give an annual course of lectures to the students on his special subject of sedimentology, a course which ran for almost 40 years. He also prosecuted his own research very actively, mainly in the Devonian and Carboniferous sediments. His D.Sc. was awarded for a series of papers on the petrology of the Old Red Sandstone, based largely on outcrops in the Bristol district. In this work Wallis was one of the first geologists to use heavy mineral analyses in the study of sediment origins. Some of the results of his researches appeared in nine papers in our Proceedings between 1922 and 1973. These include a paper on insects found in the local coalfields and his last a discussion on the use of Draycott dolomitic conglomerate as a building stone in Wells cathedral and Temple Meads Railway Station.

When Wallis became Director of the Museum in 1945, he inherited a building in which much of the geology collection had been destroyed by enemy bombing. His was a formidable task; to appoint staff, to renew the collections, to rehouse the specimens, to enthuse the public with displays, lectures and activities. Unhappily he was unable to persuade the City Council to provide a new building for the Museum, but in other ways his policies were to bear abundant fruit. He was instrumental in establishing the Museums School Service; by bringing children into contact with natural history in the museum and by taking the museum to the schools he wisely foresaw the importance and potential influence of early education in natural history. For many years he was a regular lecturer to the Workers Educational Association and he initiated a three year geology course in association with the Adult Education department of the University. This course aroused widespread interest and many members of the Society owe their enthusiasm for natural history to his lectures. It was from this course that in later years there arose the present Certificate Course in Geology. Wallis also arranged winter series of public lectures at the Museum and in his days these were usually devoted to natural history themes.

Archaeology was under his charge at the Museum, and Wallis brilliantly used his expertise in petrology to aid archaeology in identifying the source of hand axes, so making a signal contribution to prehistoric archaeology. He was closely associated with the Association for the Preservation of Ancient Bristol, the Civic Society and the Broad Plains Mission. He was a very active member of the Museums Association and was ever enthusiastic about the importance of museums communicating with the public.

Dr. Wallis was a man of tireless activity. To meet with him always left an impression of total dedication, integrity and sincerity. He was an extremely able scholar and administrator and a great educator. With all this he was a very modest and unassuming man whose inherent kindness and sympathy for others were always evident. His philosophy of life is well expressed in his presidential address to the Society (Proceedings Vol.7, 419-23, 1933). Here we read of his deep concern to communicate the basic principles of science, to enable people to understand how science works, to stimulate them with the joys of discovery, to appreciate that science and the arts go hand in hand as twin elements of man's knowledge and culture. His philosophy, though fundamentally Baconian, is still applicable today. The words of J.R.Lowell ring true for Wallis -

> The wisest man could ask no more of Fate
> Than to be simple, modest, manly, true
> Safe from the many, honoured by the few.
> To widen knowledge and escape the praise,
> Wisely to teach, because more wise to learn,
> To toil for science, not to draw men's gaze,
> But for her love of self-denial stern.
> That such a man could spring from our decays
> Fans the soul's noblest faith until it burn.

We are privileged to have had Dr. Wallis among our number and are grateful for his long years of active service. To his widow and daughter we extend our sympathy.

R.J.G.SAVAGE

AVON BIRD REPORT, 1979

COMPILED BY THE EDITORIAL COMMITTEE,
B. N. S. ORNITHOLOGICAL SECTION

P. J. Chadwick, Chairman — H. R. Hammacott, Secretary
Mrs J. Humphris — S. M. Taylor
R. G. Thomas — J. D. R. Vernon
K. E. Vinicombe — G. Youdale

Address for submission of records:
P. J. Chadwick, 3 Hill Burn, Henleaze, Bristol.

EDITORS We welcome K. E. Vinicombe and G. Youdale of Bristol Ornithological Club, who have joined the Committee and taken a full part in its work, to the great benefit of the Report. Mrs J. Humphris, a member *ex officio* as President of the Section, has also assumed a full share; this year G. Sweet was unable to do so, through pressure of other work, but he made his specialised knowledge available, as did G. E. Clothier on weather matters, and we record our gratitude to them.

THE YEAR The third coldest January of the century, a long cold spring, a cool unsettled summer, a fine September and a generally mild and frequently very wet October to December.

The cold and snow of Christmas 1978 intensified during the first week of January, and continued until late in February with only two brief milder spells. Snow in Avon was neither very deep nor very extensive; more important was the prolonged cold. The published meteorological data for Filton show that, of the 61 days from December 30, 1978 to the end of February, the minimum grass temperature was below freezing on 53, which occurred in runs of 8, 6, 15, 5, 11 and 8 days; on 23 days in this period the grass minimum was -5°C or below. One consequence of the prolonged cold was the freezing over of much of Blagdon and Chew Valley reservoirs and the dispersal of many birds that normally winter there.

The details of the dispersal may be found in the systematic list, but we note here some highlights: the Great Crested Grebes at Chew Valley Lake (CVL) dispersed to Barrow Gurney and to Cheddar Res. (Somerset), where there were 115 on Jan. 5th. The Cormorants mainly went to Barrow Gurney too, though some scattered widely. The CVL Ruddy Duck started by following the exodus to Barrow, and over 160 were there on the 27th; in February they moved to Cheddar (206 on 25th) and some scattered much further afield, but they returned in March, and reached a record total. Pochard and Tufted Duck also dispersed far and wide, as did Coot - there were only 255 at CVL and 240 at Cheddar in January, far below the usual numbers. Some gulls left, 1,000 Common moving to Cheddar and some 8,000 Black-headed joining the roost at St George's Wharf.

Unlike February 1978, when the cold and snow were largely localised to the south-west, the whole country was involved in the 1979 cold; indeed, over much of Europe it was the cruellest winter for many decades. Many birds moved westwards: in our area, large numbers of Wigeon were seen on the coast. At the New Grounds, Glos the Whitefronted Goose flock increased from 2,200 in Dec. 1978 to 5,100 on Jan. 11 - the largest for six years; when the grass froze they dispersed to feed each day, some to Bridgwater Bay, and many parties were seen coming and going. On Jan. 14 the Wildfowl Trust was host to a record 610 wild Bewick's Swans. Fieldfares and Redwings did not appear especially numerous, though 1,000 were seen at Abbots Leigh on Jan. 6, and flocks speedily stripped the berries from the hawthorns on Durdham Down, Bristol. There was a flock of some 500 Skylarks at St Georges Wharf in January, and Bramblings were noted more often and more plentifully than usual. Of rarer visitors, a Lapland Bunting at St Georges Wharf, and two more on the Somerset coast, may be mentioned. In Bristol City Docks, a Little, a Great Crested and a Slavonian Grebe were present at different times. A national influx of Red-necked Grebes in the middle two weeks of February led to reports from the New Grounds, Glos, and from Barrow Gurney, Blagdon and Chew Valley reservoirs, also from Durleigh, Somerset. Lapwing weather movements were recorded but Golden Plover and Snipe were much fewer than usual.

March was mild at first, with strong westerlies and heavy rain. Winds moved to the N.E. from the 13th; the rest of the month was cold and wet, with heavy snow in the north and some in the south-west. The miserable weather persisted in early April; a ridge of high pressure gave two warm days at Easter - in general the warmest Easter since 1949 - but the cold returned immediately. May was wet and cool too, except for a warm spell in mid-month.

A Spoonbill visited the New Grounds in March, and a number of Kittiwakes were recorded inland, including eight at Cheddar on the 16th, where an early Little Gull had been seen on the 4th. Relatively few summer migrants were to be seen until well into May. With the main rush, two Marsh Warblers came briefly to Avon. At least 14 Hoopoes were reported in Cornwall, Devon and Dorset in April, and three more in Avon, with two others later in the summer. A White-winged Black Tern at the New Grounds, Glos on May 19 was that county's third record. On May 28 a Red-necked Phalarope at Bucklands Pool, Backwell formed a notable addition to the long list of waders and waterfowl to have been seen on this small water since its creation early in 1976. The Whimbrel passage was unusually small, and no reports were received of Little Stint or Curlew Sandpiper, two species whose numbers usually vary similarly.

The high water level at Chew Valley Lake led to a successful breeding season there, with many broods of Great Crested and Little Grebes, Mallard, Gadwall, Tufted Duck and Coot, but neither Garganey nor Ruddy Duck bred. At St George's Wharf, both Ringed and Little Ringed Plover bred, and Oystercatchers may have done so, Stonechat numbers appeared to be depressed following the cold winter. For the third year, no Whinchat was seen on Nailsea Moor, where the species used to breed, but the small Reed Warbler colony continued to thrive, as did the long-standing Sedge Warbler population.

The cool, unsettled westerly weather continued until mid-June, when an anticyclone to the S.W. gave a warm, sunny week before the cool, rainy westerly weather returned. July was generally dry, with several warm spells, but August was cool and unsettled, with severe gales and heavy rain at times in the first half. Considerable numbers of Manx Shearwaters and Gannets were seen on the coast between June and August. The autumn Whimbrel passage, like the spring one, was poor; few Knot were seen in either passage, compared with the large numbers of the 1960s. A flock of 22 Shag in August was far more than are usually seen, and there were several later records.

The first three weeks of September were warm and dry, with high pressure over all Western Europe, but the last week became cool. again. September rarities were a Richard's Pipit, a Melodious Warbler, a Pectoral Sandpiper, two White-winged Black Terns (as well as one in August) and three Wilson's Phalaropes. The flock of moulting Great Crested Grebes at CVL was smaller than is usual.

Warm southerly winds in October's first week were followed by much rain. November started unsettled; there were strong winds and rain, then in the second week low temperatures and night frosts. From the 17th it became milder; an anticyclone brought a short dry and bright interlude, then in the last week a very mild S.W. air stream developed, and unseasonally mild weather continued into December.

During the autumn and winter - and indeed through the rest of the year - an interesting series of records of waterfowl, waders and gulls came from the cooling water lagoon at Oldbury Nuclear Power Station. Most of the records specified as from Oldbury-on-Severn in fact refer to this site. At CVL the high water level that had assisted breeding of waterfowl meant that autumn and winter wader numbers there were small, as no extensive mud was available. In contrast to the early months, Golden Plover flocks of some size were widely reported. Coot numbers at the reservoirs were only a few hundred in November and December, but there were well over 2,000 at Cheddar Reservoir, Som., in November and some 900 in December. For those whose main interest is in rarities the 'bird of the year' was a Greater Sand Plover, which stayed at CVL from Nov. 17th into 1980 - the second British record, the first having been in Sussex in December 1978 - and was seen by large numbers of visitors.

December's mild weather continued, giving probably the mildest start to the month in the south for 150 years. An unsettled period then began, with cold northerly air bringing rain and sleet in the north. In mid-month deep depressions gave gales and very heavy rain, with extensive flooding in parts of the south. As the wind moved to the N.E. it brought snow to the south and east, but fronts from the west gave renewed rain. There was a sunny Christmas Day, then more rain and colder weather to end the year.

GULLS The Avon Gull Study Group's investigations into the interactions of gulls and man - roosting on reservoirs, feeding on refuse tips and breeding on rooftops - are summarised in the systematic list. Close study of flocks has revealed a few yellow-legged Herring Gulls, probably of the Mediterranean race *Larus argentatus michahellis*, which is spreading north along the French coast, and now breeds on the Ile d'Oleron together with the West European race *L. a. argenteus* and the Scandinavian *L. a. argentatus*. (Dr P. Devillers, personal communication). Some mixing and movement to Britain is therefore to be expected, and it should increase.

Dark-mantled Lesser Black-backed Gulls of one of the Scandinavian races have also been prominent lately (they have been known here for many years). The complicated matter of gull identification and taxonomy was discussed in detail in a valuable paper (*British Birds* 73:113-158, March 1980) by P. J. Grant. An interesting study of Herring Gull variation at a Midland roost is described by R. A. Hume in *British Birds* 71:338-345 (August 1978).

EXOTIC AND HYBRID WATERFOWL, AND ESCAPES FROM CAPTIVITY

A list follows in order of date of first report.

Wood Duck	Male, Eastville Park, Bristol from 1978 to end of March
Chiloe Wigeon	one, Royal Portbury Dock, Jan. 14
Pochard x Tufted Duck	one, CVL, April 28 - June 30
Wigeon x Gadwall(?)	one, CVL, May 12
Ferruginous x Pochard	one, Barrow Gurney Resrs.,Aug. 25-Sep. 5
Ferruginous x Tufted	one, CVL, Sep. 1
Ferruginous x Pochard	one (another bird), CVL, Sep. 9.
Colour-ringed Scaup:	male, Royal Portbury Dock, Jan. 14-Mar. 4
	one, Bristol City Docks, Feb. 4-22
	two, same place, October
	three, same place, from Nov. into 1980

SYSTEMATIC LIST

SOURCES The following list is based on all records for the county of Avon sent to Bristol Naturalists' Society or Bristol Ornithological Club. (From the beginning of 1978 the Somerset Ornithological Society ceased to cover the area of South Avon in its annual reports on Somerset Birds.) Contributors' names are listed on page 40; we apologise for, and would like to hear of, any errors or omissions.

SEQUENCE The arrangement of species follows that of Prof. Dr K. H. Voous' recent revision, which is being used in the Handbook of the Birds of the Western Palaearctic, and which is recommended by the Report Editors' Standing Committee, British Birds and the British Trust for Ornithology.

ABBREVIATIONS NA denotes that part of Avon formerly included in Gloucestershire, and SA the remainder (which used to form District I of the Somerset Report). A few frequently mentioned place names are abbreviated:

ASW - Avonmouth Sewage Disposal Works and its surroundings, including Hoar Gout

CVL - Chew Valley Lake

SGW - the Royal Portbury Dock, the remainder of St George's Wharf, Portbury Wharf

[BBRC] following a record indicates that it has been submitted to, and accepted by, the British Birds Rarities Committee

RED-THROATED DIVER

SA One at St George's Wharf, Feb. 2-5 (GP, GJU _et al._).

GREAT NORTHERN DIVER

SA One, SGW, Feb. 4-5 (AH). An immature bird at Blagdon Res. from Dec. 2 stayed into 1980 (RJP, N&LT _et al._); another was at Barrow Gurney Resrs. from Dec. 6-29 (CN, TBS _et al._).

DIVER sp.

SA Single divers were noted flying up-river off Brean Down on April 1 (JP, JW) and on 29th (TAB).

LITTLE GREBE

NA One in Bristol City Docks, Jan. 5-29. The only other winter records were of up to six at Tortworth Park Lake early and late in year. Noted at latter also in summer; single broods, Littleton Pits and ASW. Single birds noted at latter, July, Aug., Oct. and Dec.

SA A few (seldom over five) noted early in year on various rivers, ponds and reservoirs; only one or two at Blagdon Res. and CVL, where breeding birds began to arrive at end March - 2 prs at former and c.18 prs at CVL, where c.21 broods (35+ young) seen later; one bird noted at Newton Park Lake in breeding season. Autumn: maximum of 66 at CVL (Sept. 30) falling to nine by Dec. 15 and one-two by 31st; up to seven at Barrow Gurney Resrs.; no counts at Blagdon; up to eight late in year at Bath - Newbridge, Keynsham and Saltford.

GREAT CRESTED GREBE

NA One, sometimes two, noted in Bristol City Docks, Jan. 29 - Feb. 13. One at Severn Beach, Oct. 20.

SA Rapid exodus from CVL in January due to severe freezing (only three left there on 29th); most moved to Barrow Gurney Resrs., where high count of 64 on 3rd; up to 60 remained by 13th and 31 on 27th. In same period, single birds were present at Bucklands Pool, Backwell (last seen, May 2) and Keynsham, and about six on coast (last seen, April 7). Single birds, SGW, May 1 and 29th.

At CVL, breeding birds returned from end March; 49 broods (100 young) were recorded later; the autumn moult flock was unusually small (peak below 60% of 1978 figure); monthly maxima follow:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
23	18	37	80	64	?	157	246	234	130+	241	39

Small numbers at other reservoirs: up to 33 at Barrow Gurney, up to ten at Blagdon (where one or two broods) and two (in March) at Litton. Single birds in Axe Estuary, Oct. 15 and Nov. 8.

RED-NECKED GREBE

SA One, CVL, Feb. 17 - March 4 (RSH, CN, GP et al.); one, Barrow Gurney Resrs., Feb. 21 - March 31 (GJU et al.); one, Blagdon Res., Feb. 23, joined by second, Feb. 25 - April 10, one staying to 26th (N&LT, KEV et al.). One, CVL, Oct. 6 (BLK) and one, Nov. 23 (RCP).

SLAVONIAN GREBE

NA/SA One in centre of Bristol (between Bristol Bridge and Redcliffe Bridge), Jan. 29 - Feb. 2 (KJH, HER, KEV et al.).

SA One at CVL, Feb. 4-25 (DB, JRG et al.); single birds at Blagdon Res. on March 18 (JA, WJS) and April 14 (JRB); one at SGW on April 8 (TBS). One autumn record: one at CVL, Oct. 27 - Nov. 19 (WGB, PJC et al.).

BLACK-NECKED GREBE

SA Typical spring record of one adult in summer plumage at CVL on April 13 (KEV). An adult at CVL from Aug. 15 was joined by another from Oct. 2-27, and one of them remained to Nov. 3 (PJC, AHD, KJH et al.). Two, Blagdon Res., Oct. 13 (AHD) and another, Nov. 11-17 (AHD, KJH). These autumn records involved at least four different individuals.

FULMAR

SA Noted off coast, Portishead to Brean Down, April 5 - Aug. 23 (most reports in April); single birds, except off Brean Down, where usually ones and twos, but four on April 18, at least six on 25th and 29th; two-three, June 15; and ten sightings of up to three on Aug. 23.

MANX SHEARWATER

NA One at Severn Beach and 20 at New Passage, July 7.

SA Early record of 25 at SGW, March 8 (MD). At Sand Point, 183 on June 13; 65 on 14th and 165 on July 21. Records of birds off Brean Down involve 396 on June 15; 90 on 30th; 500+ on July 7; 30 on 9th; four on Aug. 14 and eleven on 17th.

GANNET

NA An immature bird, Littleton Warth, Aug. 14.

SA Two, SGW, March 8 (MD); dead adult, Sand Bay, Aug. 25; off Brean Down, 21-33, July 7, some 90 on 9th, 33 on 19th and 20, Aug. 14th. A near-adult found inland on Sept. 20 (in a field at West Harptree) was later taken to the RSPCA (DW).

CORMORANT

Widespread reports of up to six on coast and at a few inland sites throughout year. Largest numbers were at CVL, where monthly maxima were as tabulated below; at least ten with white or whitish heads were noted on March 31 - probably older birds.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
35	55	46	32	17	12	15	34	30	44	41	46

In January severe freezing forced birds off CVL; many moved to Barrow Gurney Resrs., where a remarkable 55 on 6th, falling to 18 on 13th; also 15 at Litton Res. on 28th; small parties noted passing over Bristol in same period. Other records included up to 11, Blagdon Res., Feb. and Oct.; ten over Leigh Woods, April 15; 51 on Steep Holm, July 27; 11, Sand Point, Sept. 7; up to three on R. Avon, Keynsham-Saltford, Aug. - Dec.; up to five at ASW (max., Oct. 21).

SHAG

SA Unusually large flock of 22 immature birds, Brean Down, Aug. 17 (BR). Two, CVL, Oct. 31 (BLK) and two (immature), Dec. 2-3, then one until 15th, when found dead (AHD, N&LT, KEV et al.).

BITTERN

SA One, CVL, Jan. 7 - March 17; a second present, Feb. 25 - March 3.

GREY HERON

Reported in small numbers throughout county.

NA One feeding at garden pond, Stoke Bishop, Bristol, Jan., Feb., and September. Ten, Severn Beach, Oct. 20. Four nests, Dodington.

SA At CVL, most recorded from July to December, with max. of 32 on July 28. At Keynsham, 21 noted on Dec. 8th. At least 70 occupied nests reported: 33 at Cleeve, nine at Newton Park, 17 at Portbury and at least 11 at Uphill.

MUTE SWAN

NA Winter herd in Bristol City Docks reached peaks of 43 on Jan. 6 and of 50 on Dec. 31st.

SA Largest herds reported: Bucklands Pool, Backwell, Jan. - May, with max. 38 in April (herd failed to develop in autumn through aggressive behaviour of resident pair); moulting herd, CVL, June to October, reaching 104 on Aug. 8; up to 26, Barrow Gurney Resrs., Sept. to mid-Dec.; and up to 31, R. Axe, Oct. - November. Broods reported from CVL (three, 15 young); Blagdon Res., Bucklands Pool, Backwell, Kenn Moor, Kennet and Avon Canal, Limpley Stoke Aqueduct and Portishead (all single broods).

BEWICK'S SWAN

Widespread influx in January's cold weather.

NA Two at Northwick and six at Aust, Jan. 1; one at Severn Beach on 6th, and unusual record of three, Eastville Park Lake, Bristol on 11th. In October, ten in flight at New Passage on 27th and seven on 28th, also three at Littleton Warth on latter date.

SA Recorded regularly at Blagdon Res. and CVL until March 26, with max. of 20 on March 4; three yellow-dyed Slimbridge birds were at CVL on Feb. 6. Elsewhere, 11 over Sand Bay on Jan. 1; two, Barrow Gurney Resrs., Jan. 1-2; two, Bucklands Pool, Backwell, Jan. 1 and one irregularly until Feb. 22; 12, Axe Estuary, Jan. 4; 18, SGW, Jan. 5 and one on Feb. 22.

Present again at Blagdon and CVL from Oct. 25, when 21 at Blagdon; up to eight at each lake until Dec. 13; herd of 26 (three immatures) seen briefly at CVL on Dec. 15 - last report for year. Eight, Barrow Gurney Resrs., Oct. 28; ten over Bishop Sutton, same

PINK-FOOTED GOOSE

SA One arrived at CVL, Nov. 22 (JBOR, KEV), remaining into 1980 and later joining flock of Canada Geese. Fourth record for CVL.

WHITE-FRONTED GOOSE

Large numbers reported in January's cold, mostly in flight presumably en route to or from New Grounds, Glos.; monthly totals (including some possible duplication) were: January 1,173; February 274; March one. The larger flocks were, in NA: 107 at Northwick Warth on Jan. 1, also 57 (8 imms.) grazing on 27th, and 150+ in flight on Feb. 13; over Bristol, 48 on Jan. 2, 40 on 15th and 41 on 26th; 50 at Yate and 50 at Avonmouth, Jan. 15; and 56, Littleton Warth on Jan. 28; and in SA, 76 at SGW, 50 on Nailsea Moor and 82 at Sand Bay, all on Jan. 1; 130, Weston-s-Mare, Jan. 5; up to 100, Axe Estuary, Jan. 6 - Feb. 20; at CVL, Jan. 9 - Feb. 20 (max. of 89 on latter date); 60, Abbots Leigh, Jan. 23 and 40 at Clevedon on 30th.

Few noted late in year: in NA, two at Northwick Warth/Aust on Dec. 20 and six on 22nd; and in SA, 17 in flight, Redcliffe Bay, Oct. 21 and four at CVL on Dec. 20.

GREYLAG GOOSE

SA Feral birds continue to increase in numbers at CVL; four from 1978 until March 22; three, June 27; seven present by July 7 and eight, July 10 - Sept. 30; two, Dec. 30.

CANADA GOOSE

NA One, Littleton Warth, May 2.

SA Two, Barrow Gurney Resrs., Feb. 25; single birds, Blagdon Res., April 29 and May 30; one, Bucklands Pool, Backwell, May 2. At CVL, increase continues; six broods (27 young) were recorded; monthly max.:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
60	61	60	22+	42	71	71	82	78	69	74	82

BRENT GOOSE

All records refer to the Dark-bellied race, Branta b. bernicla.

NA Unusually large flock of 39 flew past Severn Beach and landed on water at Northwick Warth, Jan. 21 (BL, NTL, RGT). Four in same area, Feb. 3; one, Aust Warth, March 3; and one, Northwick Warth, April 28-29 (BL, RGT); one Littleton Warth, April 16 (GT).

SA Four, SGW, Feb. 3, and one, March 4 (GP, TBS, GJU); six, Axe Estuary, March 3-4 (RA, RP). Two, CVL, Dec. 8 (N&LT, KEV) - third record for lake.

SHELDUCK

Much movement early in year, but county total some 550 in mid January (perhaps inflated by weather movements) and 380 - 420 from early February until early April, but only some 170 in early May. Eleven, Steep Holm, May 19 (BES). Pairs prospecting for nest sites noted at Shiplate Slait (6 pr - PJC, GS), West End, Nailsea and Nailsea Moor, April 18 - 28. First brood seen, Kingston Seymour, May 20; last small young arrived, Sand Bay, late July. Estimate of young produced: none in NA, 110-120 on SA coast (no broods reported in NA; adults with parties of juveniles noted in July had probably moved up- or down-river). Flock of 67 noted on moult migration, Sand Bay, July 7 (TBS). Some 40 in county, late October, rising to c.95 on Nov. 25 and c.165 by Christmas. At reservoirs, one or two at Blagdon and at CVL, Jan. - Feb., up to three at Blagdon and five at CVL in March, ten at latter in April and 13 in May and June, but only one pair remained after June 10; this pair bred, five young appearing on June 13 and being last noted on July 29, after the adults had left. One or two, CVL, September to end-year.

WIGEON

Unprecedented numbers along NA coast from Littleton to Avonmouth early in year - total rose from 70 on Jan. 1 to 1,300 on 28th and 1,500 on Feb. 3 and on 17th, but only 140 by 24th. Sheperdine - Oldbury stretch held 177 on Jan. 14 and 35 on Feb. 11.

Avon total was approximately 2,550 in mid-January, falling to c.2,000 on Feb. 18 and 1,300 on 24th/25th; some 265 present, middle of March. Late males at Bucklands Pool, Backwell from April 24 to May 24 and at CVL throughout June (nine birds there on July 14). Autumn arrivals first at CVL, Aug. 26; four on R. Severn at Northwick on Sept. 7 and one off Clevedon on 16th, but total rose only very slowly to 275 in mid-November and c.535 on Dec. 15.

AMERICAN WIGEON

SA The male bird reported at CVL in 1978 remained until January 20.

GADWALL

The hard weather caused some dispersal in January and more coastal records than usual.

NA Pair, Severn Beach, Jan. 1; one, ASW, Jan. 17-18, and nine on R. Severn at Aust, Feb. 28. At Tortworth Lake, reports of one, Jan. 21, eight on 28th, six on Feb. 11 and a pair on March 4; then three on Sept. 16 and a pair on Nov. 4 and Dec. 16. A male, Littleton Pits, April 1 and a pair on the 8th.

SA Coastal records from Axe Estuary: three, Jan. 3 and seven on 31st; a pair on Feb. 1 and 4th, and four on Oct. 17th. Numbers at reservoirs very low from January to March (total of less than 45); increase in April to 115-135, mostly at CVL, where 29 broods seen later.Total up to 300 in August, but only 75-80 in mid-September, 60 in October, some 25 in November and only 16 in mid-December, though 40 noted at CVL on 13th and 25 at end of year. A female at Bucklands Pool, Backwell, Oct. 2 and 3.

TEAL

Approximately 1,025 in county in mid-January and some 1,750 in mid-February (Blagdon and CVL counted on different days); c.850 in mid-March, only 110 in early April and c.10 at end of month. On May 12 and 13 a female was seen at CVL, but there was no evidence of breeding. June total 27 (25 at CVL, pair Blagdon) but fewer in July. Autumn onwards: c.400 in mid-August, 675 in mid-Sept., only 415 in October, 660 in mid-November and 1,050 in December.

MALLARD

Breeding records (from only 20 localities) involved 93 nests or broods (56 at CVL) and included a late brood of 14 at Eastville Park Lake, Bristol on Oct. 25.

Some 1,550 - 1,650 reported in January and February, but under 600 in mid-March; approximately 1,900 by mid-September and 2,100 in October, falling to 1,700 in mid-November and 1,500 in mid-December.

PINTAIL

NA A pair, Tortworth Lake, Jan. 21; a male off Aust, Feb. 3 and a pair on April 1. Three off New Passage on Dec. 22.

SA Maximum of 16 in first winter period, a few staying to April 8. Flock of 15 flew to SW over CVL on Aug. 17, but under ten present until Sept. 24, when 19 counted. Reservoir totals 35-40 from end of October (up to 13 at Blagdon, remainder at CVL). Coastal records: one, Clevedon, Jan. 7; three, Sand Bay, Sept. 29 and seven on Oct. 5; one, Axe Estuary, Oct. 17 and five in Yeo Estuary on December 28.

GARGANEY

SA Chew Valley Lake: one. March 11, then a pair from April 6 to June 17, and three birds on June 30; no reports in July; noted in August (max. 12 on 12th) with five on 29th, but only one on Sept. 8 and two on 9th. Two in Yeo Estuary on latter date.

SHOVELER

NA Regular at ASW, January to March, with max. of 19 in late Feb.; single birds up to April 21; noted there on five dates in November (max. of seven on 26th and 27th) and three dates in December (max. 12 on 28th). Pair, Tortworth Lake, Jan. 21, 25th and Feb. 11.

Coast: a male, Littleton,April 8 and a pair, 12th-15th; a pair, Aust - Northwick Warth, April 1, a male on 8th and a pair, Oct. 28.

SA At the reservoirs, over 180 on Jan. 6 but only 44 counted on 13th-14th; 115 in late February, down to c.50 in mid-March and under 25 by late April. At CVL a pair hatched eight ducklings, but seen on only one day (DW). Big influx in late July, when 70 at CVL, then up to 115 to Aug. 18 and 260 on 19th; many moved to Barrow Gurney Resrs., where up to 104 on Sept. 20; reservoir total 315 on Nov. 11 and up to 500 in December. Coastal records: at SGW, seven on Jan. 21,four on Feb. 18 and seven on 25th, and five, March 18; at Axe Estuary, six on Jan. 22 and one, Oct. 3; at Sand Bay, a pair on April 15 and four on Sept. 8.

RED-CRESTED POCHARD

SA A female was present at Blagdon Res. on March 11 and 30, and this or another at CVL from April 21 to 29th; a male was also seen there on May 20-21. A male at Victoria Park, Bath on Oct. 14 was presumably not a wild bird.

POCHARD

The cold caused a wide dispersal from CVL early in year, with birds reported on R. Severn off Severn Beach, at ASW, in mouth of R. Avon and at SGW (up to 125), on R. Avon at Sea Mills and inland as far as Saltford (up to 43), in Bristol City Docks (six on Feb. 11), on the small lake at Wills' Factory, Hartcliffe, Bristol (up to nine) and in the R. Axe estuary.

NA At ASW, up to 16 in January, 33 in early February but 18 for rest of month, 12 on March 1 and 2nd, then usually one or two up to April 22; up to six from mid-November to end of year. Four off Severn Beach on Jan. 28 and Feb. 26. At Tortworth Lake, five were noted on Feb. 11, eight on March 4, single birds on April 29 and June 3; two, Nov. 4 and two, Dec. 16. Six, Littleton, March 4 and five there, Aug. 26.

SA Count of 200 at Barrow Gurney Resrs. on Jan. 3, but SA total probably below 350 throughout Jan. and Feb., with over a third of these in SGW area in mid-February. Up to 165 (mainly moulting males) at CVL in late June; at least four pairs bred there. From autumn onwards the SA total was c.250-275.

TUFTED DUCK

As with Pochard, cold caused dispersal to coast, rivers and minor waters in January and February. On R, Avon at Saltford, 95 in late Jan., cf. nil to 35 earlier; up to 67 in Feb., with another peak of 90 on 18th. On Wills' lake, Hartcliffe, Bristol, number more than doubled to 25 in late January. On Bucklands Pool, Backwell, up to 21 in January with 33 on 18th, up to 30 in February and 18 in March. At SGW, up to nine in Jan., seven (on 17th) in Feb., and one on March 18. On coast; at Axe Estuary, eight, Jan. 3, eleven on 12th, 23 on 22nd and one on 31st; off Clevedon, one, Jan. 7; seven in Sand Bay, Jan. 27 and one off Aust, Feb. 3.

County total about 550 from January to April; maximum in September (about 765), then decline to c. 500 in December. Breeding reported from Tortworth Lake, Wills' lake at Hartcliffe, Bristol and CVL (3, 2 and 24 broods). Two birds, Oldbury on Severn, Dec. 22.

SCAUP

SA Records refer to single birds unless otherwise stated. Immature males at Barrow Gurney Resrs. on Jan. 2 and 13th, and in Axe Estuary on 3rd. Female, Bucklands Pool, Backwell, Jan. 14 to April 27. At CVL, females or immature birds, July 15, Oct. 27 and Dec. 16, and a flightless male on Sept. 1; a female at Blagdon res.

on Oct. 28 was perhaps the CVL bird. Three (2 males) in Axe Estuary, Oct. 17 and one on 30th. Four, Barrow Gurney Resrs., Dec. 17, and two on 24th.

Considerable doubt must be attached to the genuine wildness of Scaup seen inland in Avon, in view of the presence of colour-ringed birds at Portishead - Sea Mills, two in Bristol City Docks in January and up to three from October into 1980.

EIDER

SA Only three reports - a female with an immature male off Clevedon on Jan. 7 (NAL), a female on Barrow Gurney Resrs. on Feb. 16 (MD) and one seen flying into Weston Bay on April 25 (BR).

LONG-TAILED DUCK

SA Single birds present at CVL on Oct. 27, Nov. 24 and 25th, but three on Nov. 11-18 and two, Dec. 16 (RMC, SBE, N&LT *et al*.). One, female or immature, at Barrow Gurney Resrs., Nov. 4-8 and again from Dec. 16-24 (KJH,CN,TBS *et al*.)

COMMON SCOTER

NA One in pools at ASW on Feb. 20. Three (2 males) off Chittening on July 21 and two males on 28th.

SA Noted off Brean Down chiefly in April: seven females, Jan. 6; party of 16, April 1, seven on 6th, a male on 15th and 22nd, and three on 21st; and a pair on July 9. Party of 17 to S off Middle Hope on June 18. A female or immature off Clevedon, Nov. 10. At CVL, one on Feb. 17, one on April 2, seven (3 males) on July 3, a male on 22nd and a pair on 28th.

GOLDENEYE

NA A pair. Monkswood Reservoir, Bath, Jan. 6-9; a female, Tortworth Lake and a male off Severn Beach, both Jan. 28.

SA Coastal records: one off Clevedon, Jan. 7 and (a male) 14th; a female, Royal Portbury Dock, Feb. 1 - March 18; two off Clevedon, Sept. 16 and one, Axe Estuary, Oct. 30. One, Bucklands Pool, Backwell, Oct. 28. The reservoir totals were 39, Jan. 13, c.35 from Feb. 18 to March 11 (but 67 at CVL, Feb. 24), 55-60 from March 17-31, falling to 24 by April 22; up to five, early May and one as late as 20th. One at CVL, Aug. 26 - Oct. 7, with increase to 15 by end of month, 18 in mid-November and 20 on Dec. 9th. Reservoir totals were c.30 in mid-November and c.25 from Dec. 15 to end of year.

SMEW

SA A pair, Axe Estuary, Jan. 3 (RA) was an unusual record, as most Avon sightings are at reservoirs. Reservoirs: one, Barrow Gurney, Jan. 6-7; male, Blagdon, Jan. 27 then up to four in February, a male on March 3-4 and a pair from the 17th-31st; at CVL, a female, Jan. 8 and two on 13th; four (1 male) on 27th and up to four (1 male) to Feb. 2 , only one from 26th - March 3, two females from March 11-16 then one to April 27, with a male also there, Apr. 1st. A male in eclipse plumage visited CVL from Oct. 25, moving to Blagdon on Dec. 25; a female was at CVL from Nov. 10 to year-end.

RED-BREASTED MERGANSER

More records than usual, but all from SA.

SA A 'brownhead', Axe Estuary, Jan. 20 (RA). A male, R. Avon (Sea Mills), Feb. 5 (HER). A 'brownhead' in Sand Bay, Dec. 21 (RA) and a male off Clevedon, 28th-30th (ILC, INW). All other records from Blagdon Res.: a male, Feb. 11 (with possibly three females, though description not conclusive)(RP) and 23rd-25th (PAG, LT et al.) and a 'brownhead' on Nov. 11 (PJC).

GOOSANDER

Record numbers in county but none reported from NA.

SA The 'brownhead' off Clevedon, first seen in 1978, stayed until March 4. Five to NW over Leigh Woods, Jan. 5; one in Royal Portbury Dock on 11th; a male, R. Avon, Saltford, 14th - 28th and four birds at Chewton Keynsham, April 1; a pair off Clevedon, Dec. 30.

Reservoirs: total of c.120 (up to 20 males) in early January and c.80 on 21st; steady fall in February (65 on 4th to 36 on 20th) then a sharp rise to at least 85, possibly over 100, on 24th and 25th; 14, March 3, but 39 on 11th and 30 on 31st; six, April 2 and a pair on 9th. Single females at CVL and Blagdon on Oct. 28; up to 18 at CVL by Nov. 25, and reservoir total at least 42 on Dec. 15.

RUDDY DUCK

In January's freezing conditions the CVL flock dispersed widely both within and outside the county, but the birds returned in March. In this period counts at the reservoirs varied widely: at Barrow Gurney, one on Jan. 3rd, 160 on 27th and 60 on 28th, 53 on Feb. 24 and eight next day; at Blagdon, up to 110 in January (on 13th) and in February (on 25th) but only seven on Feb. 10; at CVL, totals ranged from seven to 51 in January, 32 to 186 in February and 80 to a record 317 in March (on 11th). Other reports: two at Aust on

Jan. 6; two at Clevedon on 21st; one in Royal Portbury Dock on 28th; a female on R. Avon at Saltford, Feb. 27. Monthly peak totals:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
205	195	325	65	8	3	10	10	30	169*	237	263**

* 149 at CVL **163 at CVL

There was no evidence of breeding within the county.

RED KITE

SA One over Brean Down, Som. on March 18 flew in direction of Uphill and so presumably entered Avon. (JP).

MARSH HARRIER

SA A female or immature bird visited CVL on May 19 (AHD, RM).

HEN HARRIER

SA A 'ringtail' was noted at CVL throughout January (WE, SK _et al._) and another at Blagdon Res. on Jan. 7 (N&LT). Single males were reported from the Axe Estuary several times in January (RA, TAB, BR) and in the Sand Bay area on 7th (JW), and at SGW from Feb. 10-15 (AB, JAH, JRB, TBS). A male was noted at Sand Bay on Nov. 3 (RA, TBS) and later the same day in the R. Banwell (MAS).

SPARROWHAWK

Reported in breeding season from 43 localities (13 in NA) with evidence of breeding at seven - four in ST57 Iincluding three within the Bristol City Boundary) and one each in ST46, 77 and 78. Many reports in remainder of year.

BUZZARD

NA As in 1978, evidence of three pairs along the Avon/Glos border (in ST69 and ST78); a June sighting also from ST58, but no evidence of breeding.

SA Breeding-season reports from some 20 localities. Many reports outside the breeding season.

OSPREY

NA One at New Passage, Oct. 27 (NTL).

SA One at Flax Bourton, May 17 (DAJ, MJ).

KESTREL

Breeding-season records from some 96 1-km squares (40 in NA). Records within Bristol City boundary indicated 18 pairs; 14 nest sites were located and three other pairs probably bred.

Elsewhere the only nests reported were at Queen Charlton (ST56), Portbury (ST47) and Frenchay (ST67). A search of several traditional sites proved negative, and the season seems to have been a poor one for breeding outside the urban environment. Large numbers of reports outside breeding season.

MERLIN

NA Five reports of a female between Severn Beach and Aust Cliff, Jan. 27 - Feb. 10 and again on March 8 and 30. A female, Filton, Feb. 11 (N&LT). A male, Stoke Gifford, Oct. 13 (PJC). A female, between Chittening and Aust Warth, many dates in October - December (BL, NTL, RGT).

SA A female at SGW on several dates, Jan. 6-28 and on Feb. 22 (AH, GP *et al.*) - possibly the NA bird. One, Axe Estuary, Jan. 22 (BR) and one, Clevedon, Feb. 11 (RS). One, Axe Estuary, Oct. 8-12 and on Nov. 7 (RA, BR). Inland, noted at CVL on Jan. 13 (RMC), March 3 (DB), Oct. 13 (RMC) and Nov. 17 (LJW) - all single birds.

HOBBY

NA One pair bred; first seen in locality on May 14; three young reared; all ringed July 21 and fledged Aug. 21. Three records from other localities of single birds in the breeding season.

SA Breeding-season reports from only two main areas. Other records; two migrants flying N, Sand Point, May 6 (TBS); single birds at three other localities, late August-September; one flying S, Keynsham, Sept. 23 (AHD). Latest record: one, Nailsea area, Oct. 14.

PEREGRINE

NA In Chittening-Aust area, single birds seen on Jan. 6 (taking a Redshank) and 24th, Feb. 25 (an immature bird) and March 2; an adult in same area, Aug. 4 and an immature bird from Nov. 3 - 28th.

SA One, Axe Estuary in January and two, Feb. 9 (BR); an immature male at SGW on Feb. 8 (GJU); a male and female there, April 19 (MTD); a male, Blagdon Res., Jan. 13 (AHD); at CVL, an adult female noted throughout Jan., also an immature male on two dates; one throughout February and March (immature female, March 6 - N&LT) and April 15 (AWH). An immature bird, SGW, Aug. 19 (TBS); single birds, Axe Estuary, Sept. 5 and 24, several times in October and Dec. 31 (RA, BR); also at Weston Woods, Oct. 7 (RA), Sand Point, Nov. 3(KJH *et al.*) and Sand Bay, Dec. 23 (RA). At CVL, an immature bird, Oct. 6, an adult, Nov. 18 and one, Dec. 16; at Blagdon Res., one on Dec. 21 (JW).

RED-LEGGED PARTRIDGE

Both this species and Grey Partridge were reported from more localities than in recent years.

NA Breeding-season reports of a pair at Marshfield and single birds at Latteridge, Frampton Cotterell, Wapley and Hinton. A covey of five was noted at Wapley on Dec. 2.

SA Pairs were reported in the breeding season from Chewton Keynsham, Compton Dando and Priston; and single birds from Stanton Prior. A covey of 13 was noted near Burnett on Oct. 28.

GREY PARTRIDGE

NA Breeding-season records came from Aust, Tockington (nest with 13 eggs, April - AEB), Alveston, Marshfield and Oakford. Coveys were reported in winter from Littleton Warth (seven birds, in October) and Alveston (six, in December).

SA Reports during the breeding season from nine areas; young birds were seen at Chew Magna (two), CVL (six, July) and Brinsea Moor (a covey with young during summer). Winter reports from eleven places ranged from one to a covey of eleven.

QUAIL

An estimated eleven birds were heard (and one was seen) during July at Marshfield (NA), and single birds were heard in SA near Winford in May and at Stanton Prior in July.

WATER RAIL

Records in winter only, two referring to corpses.

NA Single birds at Chittening (remains of kill) and at Hoar Gout.

SA One at SGW in February and three records from Chew Magna in March. One killed by cat at West Harptree.

MOORHEN

Widely distributed; several observers expressed the opinion that numbers were reduced after the 1978-9 winter, especially in SA. Within the City of Bristol, three pairs bred at Hartcliffe and one pair at Eastville, but predators (including man) killed all the young; at St George Park, breeding was probably successful. A mainly albino bird was noted on the Avon at Keynsham in September.

COOT

During the cold weather in January, birds were reported from the R. Severn at Aust and Severn Beach; and in Bristol from the R. Avon and the City Docks.

NA Bred at Tortworth Lake, Littleton Pits and ASW.

SA Breeding reports received from Hunstrete and Newton Park Lakes, and from the reservoirs. At CVL, KEV counted 68 broods with 174 young. The monthly peak counts at Barrow Gurney Resrs. and CVL:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BG	40							105	225	409	426	277
CVL	225	585	520	500	610		1085	1460	841	536	328	264

Of the relatively few Blagdon counts received, the max. was 335 (Feb.)

OYSTERCATCHER

NA Up to four, Aust to Chittening, and one or two elsewhere on coast, January and February, and mid-June to year-end; small passage in April indicated by four at Sheperdine on 14th, 17 at Severn Beach on 15th and two at Littleton Warth on 27th.

SA At SGW, up to five from February to August, but 16 on April 16. From Clevedon to R. Yeo, present all year, generally up to 11 but 17 on March 4; one pair probably bred. In Sand Bay, present all year, with counts between 30 and 50 up to April 10 (but 72, Feb. 24), then 20 or fewer up to mid-October and up to 41 from then to year-end. In the Axe Estuary, up to 61 from January to June 1, and up to 50 from Aug. 18 to year-end (but 110 on Aug. 26).

Inland, only at CVL: occasional single birds up to June 30, up to nine from July 30 to Oct. 24 (but 15 on Aug. 19).

AVOCET

SA One record - one at Axe Estuary on Jan. 1 (BR) - seen also on Dec. 30, 1978 (TRJW).

LITTLE RINGED PLOVER

NA One at Severn Beach on April 3 and one at Littleton Warth on April 8 (GT).

SA At SGW, single birds were noted on April 16 and May 7 (WGB) and a pair present through June and July raised four young (MTD, GY). One present at Uphill, Aug. 30 (A J O'N). At Chew Valley Lake, two on April 9 (DAA,PMG) and one, May 12 (RP); an adult, July 22 and a juvenile on 28th (8 observers); main passage from Aug. 4 to Sept. 21 with up to three present (four on Sept. 1) - all juveniles except for single adults on two dates (many observers). At Barrow Gurney Resrs. a single juvenile bird was present from Aug. 19-26 (KJH,KEV).

RINGED PLOVER

As in 1978, a pair bred at SGW; four young were reared. At Barrow Gurney Resrs. a few were present during the autumn passage, 16 being noted on Aug. 25 and up to six between Sept. 1 and 19.

The table gives the monthly maxima in the main areas: in NA, Oldbury Power Station, Severn Beach to Chittening; and in SA, SGW, Sand Bay, Axe Estuary and CVL.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OPS	70	30	8		12	2	28	200	270	50	33	3
SB/C	24	25	25	51	131	37	30	750	330	80	37	31
SGW	10	25					10					
SBay	25	37			32	3		210	207	20	36	18
Axe	55	80						62	65	62	47	5
CVL			1					6	22	3	1	

GREATER SAND PLOVER *Charadrius leschenaultii*

SA A single bird was present at CVL from November 17 to the end of the year (CN, KEV *et al.*). The first record for Avon and the third for Great Britain (all three within twelve months). [BBRC]

DOTTEREL

SA One near Woodspring Priory, Aug. 24 (JW); one at Middle Hope on 26th was almost certainly the same bird (PBK, MAS).

GOLDEN PLOVER

NA At Littleton Warth, c.30 on Jan. 24 and one on Oct. 24. At Chittening, one on Sept. 28. At Tormarton, two on Sept. 22 and some 200 on Oct. 21.

SA Recorded from Jan. 1 to March 18, on May 2 and from Aug. 4 to year-end. Counts of 100 or more:

	Jan	Feb	April	Sep	Oct	Nov	Dec
Chewton Plain		110			233		
Marksbury Plain			113				132
Kenn Moor		150					
Nailsea Moor					200		
Clevedon-R. Yeo	140	100			233	200	203
Axe Estuary				200	320	173	350

Five at CVL, Jan. 21; from Sept. 9 onwards the monthly maxima there were one, 19, 18 and 95.

GREY PLOVER

NA Noted on coast, January, February and Aug. 27 onwards, with up to six at Sheperdine, two at Oldbury and seven at Severn Beach (but ten, Oct. 6 and 38 on 14th at latter place). One or two, Oldbury Power station, in May.

SA Noted on coast in winter months and April 15 - June 10, with up to two at SGW, six from Clevedon to R. Yeo, one in Sand Bay and two in Axe Estuary. At CVL, one, Aug. 19 and one, Dec. 13.

LAPWING

NA Breeding proved at Wickwar (2 yng), Westerleigh (3 yng), Aust (4 eggs); breeding probable at Falfield, Wapley and Littleton on Severn. At Northwick, 1,000 on Jan. 1, falling to 300 on 27th and 60 on March 3; autumn flocks of 300, June 25, reaching 1,000 on July 13 and 1,700 on Aug. 29, then decreasing to 500 or less to year-end. Some 1,500 in Tormarton area, Sept. 15. Counts on R. Avon at Sea Mills fell from 120 on Jan. 22 to two by March 5: pre-

SA Breeding proved at Ashton Marsh (2 pairs), Portbury (6 pairs), Nailsea Moor (2 pairs) and Congresbury (a pair); and probable at Failand, Norton Hawkfield, Sutton Hill, Marksbury Plain and Walton Moor. Numerous flocks noted moving W or SW during the cold weather in early January. Winter flocks of 500 or more were noted in January at SGW (600), Clevedon - R. Yeo (600) and Axe Estuary (3,000); and in February from Clevedon - R. Yeo (1,000).

Autumn flocks of 500 or more were recorded from July 1; peak monthly counts from then to the end of the year in the main areas:

	July	Aug.	Sept.	Oct.	Nov.	Dec.
Clevedon - R. Banwell	700	3,000	1,100	400	250	900
R. Axe Estuary			800		1,500	1,000
Chew Valley Lake	150	730	800	650	350	2,000

KNOT

The gradual decline of this species in Avon continues; for the first time in 25 years no count reached 50.

NA Oldbury-on-Severn: three, March 18; one, May 9, 16 from Sept. 9-13 and 20 on the 23rd. Aust to Chittening: up to six in January, five on Feb. 18, 18 on May 13, ten or fewer on six dates from July 28 to Nov. 10 (but 12 on Sept. 15, 48 on Oct. 14 and 30 on Oct. 7.

SA Three at Sand Bay, Jan. 1-3, and at Axe Estuary, Feb. 20. Present again from Aug. 8 to year-end, counts exceeding three only in September, when maxima of eight at Clevedon and 44 at Sand Bay. Inland records only from CVL - one on Feb. 24 and one, Sept. 21-23.

SANDERLING

NA Severn Beach: spring passage from April 18 to June 3; generally up to three birds, but six on May 9 and 18th, twelve (nine in summer plumage) on May 22 and ten on June 3; autumn passage from July 23 to Sept. 7, with up to three birds on six dates. The only other reports were of one at Oldbury-on-Severn on Sept. 9 and one at Northwick next day.

SA No spring records from the coast; single birds noted at CVL on May 5 and 14, and at Blagdon on 9th. Autumn passage from July 22 to Sept. 20; at Sand Bay, six on July 27, up to seven on five August dates, and from six to 20 birds on eight dates between Sept. 1 and 20th; eight at Axe Estuary, Aug. 25; inland, one at CVL on July 22 and three on Sept. 9.

LITTLE STINT

No records received of spring passage.

NA One at Oldbury-on-Severn, Sept. 3 and three, Oct. 7 (TGE, JDRV). Four, Severn Beach - Aust, Sept. 30 and one, Oct. 6 (BL, NTL, RGT).

SA Two, Clevedon - R. Yeo, Oct. 7 (MSK, HER). At Axe Estuary, one on Aug. 30 and one, Oct. 6 and 7th (RA, AJO'N, BR). At CVL, present from Aug. 9; single birds noted in August, up to four in September, up to 13 in October and up to four in December (many observers). One at Blagdon Reservoir on Nov. 17 (AHD).

PECTORAL SANDPIPER

SA One at Axe Estuary, Sept. 24-25 (BR).

CURLEW SANDPIPER

No records received of spring passage.

NA Ten at Oldbury-on-Severn, Sept. 9 and one, Oct. 7 (TGE, JDRV). Six at Northwick Warth, Aug. 27 (RGT). One at Severn Beach, Sept. 22 and one, Oct. 13 (BL, NTL, RGT).

SA Small numbers on coast, Aug. 26 to Oct. 28. At Clevedon, single birds on Sept. 1 and 16th, Oct. 7 and 28th, and two on 10th (MSK, HER). At Sand Bay, one on Aug. 26, two on 27th (RA, PBK, TBS), one on Sept. 6-7 and 15th, two on 8th and three on 9th (RA, GWR, JW). One at Uphill, Sept. 8 (AJO'N). Recorded at CVL from Aug. 21 to Nov. 21; single birds present on eight dates, three on Sept. 7 and 8th, and four on Sept. 21 and 22nd (many observers). One at Blagdon Reservoir on Oct. 28 (SBE).

PURPLE SANDPIPER

NA Reported only from Severn Beach, where present from January to May 11 and again from Oct. 27 to year-end; maxima of 4-6 to end of April, and three in other months.

SA Two at SGW, April 9 (MTD). One at C VL on Dec. 11 (AM) was the second record for the Lake, the first being in November 1969.

DUNLIN

The table shows the monthly maxima of this, our most numerous wader, in the main areas: Sheperdine, Oldbury-on-Severn, Severn Beach to Chittening, SGW, Clevedon to R. Yeo, Sand Bay, Axe Estuary and Chew Valley Lake. Two large flocks were also reported from Littleton-on-Severn: 950 in January and 300 in February.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Shep.	880	620								155	150	102
OPS	600	650	250	nil	230		550	550	300	470	800	500
SB/C	5000	7000	2500	575	1000	40	150	300	150	500	1000	800
SGW	300	500	200	20	4		250					200
C/RY	2200	2000	1200	160	120	15	35	150	73	1200	2500	2000
SBay	1500	5000	600		200	1	570	500	500	1100	2000	2500
Axe	1000	3000	300								600	2000
CVL	330	100	20	21	9		8	21	22	15	116	200

RUFF

NA One, Oldbury-on-Severn, Sept. 9 (TGE, JDRV). Present at Northwick Warth from Aug. 22 to Sept. 9 and on Oct. 7; generally up to five birds but 12 on Aug. 26 (BL, RGT).

SA Recorded on the coast only at Axe Estuary - one, Jan. 3 and one or two, Oct. 6-9 (BR). Reservoirs: at CVL, up to six in January, two on Feb. 20, three on March 3 and one on 6th. Present again from Aug. 10 to Nov. 3, with monthly maxima of nine on Aug. 30th, 16 on Sept. 9 and three thereafter. At Barrow Gurney Resrs. up to four on Feb. 24-26 and two on Sept. 3-5 (many observers).

JACK SNIPE

NA Single birds at Littleton Warth on March 30; from Aust to Chittening occasionally up to March 4 and from Oct. 8 onwards; and at Sea Mills on Jan. 26.

SA Coastal records up to March 19 and from Nov. 19 onwards: up to three at SGW, two near Clevedon and two, Sand Bay. One at Kenn Moor, Jan. 28. At CVL, one on Oct. 5 and two on 17th.

SNIPE

NA Recorded from January to April and July 27 to December; usually up to three birds on coast, but 11 on Aug. 27 and six on Sept. 8, between Aust and Chittening. At ASW, max. of 16 (on Jan. 11) until April, and max. of six (on Dec. 9) from July 27oonwards.

SA Coastal records up to April 1 and from July 1 onwards; largest counts from Clevedon to R. Yeo, where 35 present on Jan. 21 and 65 in December. At Ashton Marsh, Bristol, 61 present on April 25 and males drumming in April and May; pair displaying, SGW, May 29; no proof of breeding at either place.

At the reservoirs, noted up to May 19 and from Aug. 2, with monthly peak counts as follows:

	Jan	Feb	Mar	Apr	May	:	Aug	Sep	Oct	Nov	Dec
Blagdon	5	5				:		5	150		2
CVL	6	6	20	6	6	:	20	35	150	40	10

WOODCOCK

NA Two at Tortworth Lake, Jan. 28 (JH). One at Moorgrove Wood, Henbury, Bristol, Oct. 24 (SC).

SA Single birds reported from Blagdon Res., Jan. 1; Abbots Leigh on 20th and 23rd; Windmill Hill, Portbury, Jan. 21; CVL, Jan. 10 and 28th; Leigh Woods, March 21; Hutton, March 24; Canada Combe, April 5; West End, Nailsea, Oct. 24; Banwell, Nov. 2; Weston Moor on 5th and Upper Langford on 17th. One found dead on M5 near Clevedon interchange, Dec. 24 (BR).

BLACK-TAILED GODWIT

NA Eight, Oldbury-on-Severn, May 9 - the only spring record; up to five there and Aust to Chittening, July 10 - Oct. 14, but in latter area 15 on Sept. 7 and ten on 9th.

SA One, Axe Estuary, Jan. 1-2. Spring records from Clevedon to R. Yeo (one, April 15 and two, May 6) and CVL (one, May 25 and six on June 27). Noted in autumn, coast and CVL, from July 16 to Nov. 10, with a maximum of four.

BAR-TAILED GODWIT

NA Spring passage April 10 - May 13: up to five on six dates, mostly from Severn Beach - Chittening (where also six on Jan. 1). Autumn passage July 23 - Oct. 13; noted on 18 dates, with maximum of 17 at Northwick on Sept. 15.

SA Noted on coast from February to December; generally up to five, but 19, Clevedon - R. Yeo, May 27, and up to nine at Sand Bay in September. Up to six at CVL between Sept. 12 and Nov. 11, and one at Blagdon Reservoir on Sept. 15.

WHIMBREL

NA Spring: five at Nupdown (Hill) and five at Oldbury-on-Severn, May 9; single birds at Littleton Warth on April 29 and May 12, and at Severn Beach - Chittening on April 28 and May 2. Autumn records mostly of single birds: Littleton Warth, July 13 (two) and Aug. 8; Northwick, July 10; Severn Beach - Chittening, July 22, Aug. 3 and Oct. 9 (two).

SA Spring passage from April 16 to May 20, with up to 25, Clevedon to Yeo, 13 at Sand Bay and three at CVL; autumn passage from July 8 to Sept. 4, with up to 19 at Clevedon, five at Sand Bay, two at CVL and one at Blagdon Reservoir.

CURLEW

The table gives the highest monthly counts in the main areas: Severn Beach - Chittening, the R. Avon at Sea Mills, SGW, Clevedon - R. Banwell, Sand Bay, R. Axe Estuary and Chew Valley Lake.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SB/C	85	122	37	25	9	45	120	116	150	134	103	120
Avon	36	28	8	nil	nil	nil	2			14	22	13
SGW		30	1	8	5		38	41				
C/RB	10	60	60	12	2	12	98	117	40	30	20	80
SBay	115	180	120	45	8	40	154	175	228	101	136	140
Axe	110	200	100					1			250	150
CVL	1	1	4	1		2	2	4	8	9	10	9

SPOTTED REDSHANK

A bird ringed at Portbury in August 1973 was shot near Beziers, S. France, in September 1979 - a distance of 1021 km SE.

NA One at ASW, June 15 (BG). One or two noted on coast on five dates, Aug. 22 - Sept. 9.

SA One at Sand Bay, Aug. 26 (RA). Otherwise recorded only at CVL, where one on April 1, June 28 and July 28, up to nine in August, 25 in September, 17 in October and one in November.

REDSHANK

The table gives the highest monthly counts in the main areas, Oldbury-on-Severn, Severn Beach - Chittening, R. Avon (Sea Mills), SGW, Clevedon - R. Banwell, Sand Bay, Axe Estuary and Chew Valley Lake. A pair bred at SGW, and breeding was probable at Clevedon - R. Yeo, Nailsea Moor and Congresbury.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Old.	14	20	46	nil	nil	3	88	42	60	36	11	nil
SB/C	200	200	183	60	1	4	210	200	300	375	250	300
Avon	42	130	85	4			12	1	71	120	100	90
SGW	150	150	200	66	8		1500	50				180
C/RB	50	50	60	40	25	42	130	180	200	200	80	75
SBay	30	120	90				92	135	150	40	130	125
Axe	40	75	35						40	80	60	60
CVL			2	2		1	2	3	4	1	1	

GREENSHANK

NA Noted on coast on ten dates between July 10 and Oct. 18; generally up to five but eight, Oldbury-on-Severn, Sept. 9. One at ASW July 23-27 and one at Sea Mills on Oct. 25.

SA One, Clevedon coast, May 13 - the only spring record. Autumn records from July 13 to Nov. 8, generally of up to five but with maxima of seven at SGW in August; 15 at Clevedon - R. Banwell, six at Sand Bay and nine at Axe Estuary in September; and 30 at CVL in both months, then 11 in October. Single birds noted at Blagdon Res. on Aug. 18 and Sept. 15 and at Bucklands Pool on Aug. 21.

GREEN SANDPIPER

NA One or two at Littleton on Severn on four dates, March 24 to May 6 and up to seven on six dates, July 14 to Oct. 28. One, Aust to Chittening, July 8, two on 23rd and one, Aug. 27-28. At ASW, one often seen from January to March 30, up to four throughout July and August, and single birds on Sept. 24, Oct. 3, Nov. 3 and Dec. 7, two on Dec. 22 and one on 24th. One inland at Hinton (ST77) on Aug. 26.

SA Coastal records from January to April 23 and from late July onwards, usually of up to four birds but with maxima of eight at SGW and 14 from Clevedon to R. Banwell in August, and seven in latter area in September.

Inland records: up to three at CVL from January to April 14 and one on June 20; between July 14 and year-end, the monthly maxima there were 13, 16, 11, 5, 8 and 5. Single birds also noted at Barrow Gurney Resrs. in February and August (and two, Sept. 28), at Blagdon Res. in September and October, at Bucklands Pool, Backwell in July, August and October, at Kenn Moor in February, and at Nailsea Moor and Congresbury in December.

WOOD SANDPIPER

NA Two at Northwick Warth, Aug. 25 (BL).

SA One at CVL on April 25 (MJ), two on July 20 (JSR) and one on eight dates between Aug. 1 and Sept. 9 (eight observers). One at Uphill, Aug. 29 (AJO'N).

COMMON SANDPIPER

NA Winter: one on R. Avon, Sea Mills, from January to March and from Oct. 29 onwards, and one at ASW in January and December.
Spring passage, April 24 - May 9, with one or two on coast, three at Sea Mills from April 24-30 and up to seven there from May 2-9.
Autumn passage from July 10 to Oct. 11, with up to eight on the coast, up to five at ASW and up to even at Sea Mills; four on R. Avon at St Philips, Bristol, Aug. 19.

SA Winter: at CVL, one or two in first half of January and single birds from late October to end of year; one, Clevedon coast, Dec. 2.
Spring passage: birds noted April 11 - June 27, with maxima of three on coast, 17 (on April 1) at CVL, four at Blagdon Res., three at Barrow Gurney Resrs., three at Bucklands Pool, Backwell and seven on R. Avon between Keynsham and Saltford.
Autumn passage: July 8 to early October, with maxima of 17 at SGW in August, 11 on Clevedon coast in August, nine in Axe Estuary (on Sept. 1), seven at Barrow Gurney Resrs. and two at Blagdon Res. in August, 21 at CVL in July, then 28 in August and 13 in September (on 1st), four at Bucklands Pool in August and September, and four on R. Avon, Keynsham - Saltford, July 17 - Aug. 24.

TURNSTONE

Data for Sheperdine, Severn Beach and Clevedon are given in the table on the next page. Other records: three at SGW, July 13 to 23rd, and one on Aug. 19; one in April at Sand Bay; one in Axe Estuary on Jan. 6 and two, Oct. 16; single birds at CVL on June 5, July 29, Aug. 25, and five there on Aug. 12.

The table gives the monthly maxima in the main areas, which are Sheperdine, Severn Beach to Chittening and Clevedon:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov.	Dec
Shep.	146	63		36						89	104	30
SB/C	112	92	152	400	250	55	83	200	200	150	90	120
Clev.	15	23	19	25	4	nil	nil	15	25	24	24	27

WILSON'S PHALAROPE

SA One of this Nearctic species was seen at CVL on Sept. 20-21 (JA, MPH, N&LT, KEV); and a first-winter bird was seen there on Sept. 29 - Oct. 4 (RMC, AHD, KEV *et al.*). Third and fourth records for Avon; all have occurred here in September. [BBRC]

RED-NECKED PHALAROPE

SA One at Bucklands Pool, Backwell on May 26 (HRHL, AFS, TBS); the fifth Avon record (the others were in September 1921, Sept. 1965, August 1969 and May 1978). [BBRC]

ARCTIC SKUA

NA A dark-phase bird was seen off New Passage on July 7 (BL).

SA Single birds at Sand Point, April 28 (TBS) and at CVL (a light phase adult bird) on Aug. 24 (BLK, HRHL).

GREAT SKUA

SA One off Sand Point, April 29 (RA, TBS) and single birds on July 7 and 15 off Brean Down flying up-channel into Avon waters (JP, BR).

MEDITERRANEAN GULL

NA An adult bird in a flooded field at Stoke Gufford, March 18 (PJC) was the first to be reported from North Avon.

SA An adult, Barrow Gurney Resrs., Jan. 6 (AM, KEV). At the CVL gull roost, an adult was seen on Jan. 20, March 11 and 31st, and two on Feb. 24 (KEV *et al.*); also an adult on Dec. 17 and 30th (MAB, CN, KEV *et al.*). One at Axe Estuary, Oct. 13-14 (RJP, BR).

LITTLE GULL

NA At the Oldbury Power Station lagoon, two or more immature birds were present between May 24 and June 10, with a maximum of nine on May 28 and June 10; seven present on May 26 left at 18.15 hrs, flying west across the river and then following the shoreline to the south-west(TGE, JDRV).

SA At CVL, a sub-adult bird was noted on April 1, two-three adult birds on April 13-14 and seven adults on May 5; from two to six juvenile birds were present in August, and ten on Aug. 24, then three or four from Sept. 3 - 8, and also two adults on the latter date. One, Sand Bay, Oct. 6 and 7 (TBS).

BLACK-HEADED GULL

NA The table shows the monthly maxima of daily counts at Chittening by RGT and at Sea Mills by HER. The figures illustrate the decline of the winter flocks and their subsequent build-up, as well as a strong passage movement in August and September.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chit.	2000		400	80	5	140	250*	1200	1000	600	300	2000
Sea M.	1000	1600	650	20	15	70	300	1700	1900	70	400	1800

* 250 on July 6 and 2700 on 20th

SA Regular counts by EVS at Bucklands Pool, Backwell showed maximum numbers of 320 in March and 625 in December.

The roost at SGW held some 2,000 on Jan. 8 (as in late 1978) but some 9,000 - 12,000 on 25th. The additional birds had probably moved from the CVL roost when the reservoir froze; there were only some 8,400 there in early February, compared with 20,000 or so in late 1978. Autumn counts at CVL showed some 14,500 at roost in September and 17,500 in December.

COMMON GULL

NA A maximum of 10 - 17 were present in mid-winter in the Severn Beach area, but 28 on March 28 (RGT). Flocks in the Iron Acton - Tytherington area on March 15 well exceeded the winter total, indicating a movement through the area (JDRV). In September a few flocks totalling 1,500 were noted near Marshfield and Tormarton.

SA At Saltford, usually only one or two are seen, but there were 77 on March 15 and 21 on the 25th (JWD), indicating a passage movement. At Portishead, some evidence of a passage to the SW, April 1 - 17, with a maximum of 74 (37 adults) on the 1st (TBS). This is an unusual passage direction, and could perhaps indicate a return of birds to Irish colonies. At Brean Down, Som., some 800 (presumably migrants) flew along the N side of the Down and out to sea in strong NW winds, near noon on March 28 (JSR), and probably entered Avon waters.

At the CVL roost, 12,800 were present on Feb. 4, declining to 100 by April 2; 50 in late September and nearly 12,000 in December.

LESSER BLACK-BACKED GULL

NA Flocks noted included 112 feeding at a pig swill unit near Iron Acton in July; 230 on plough at Cold Ashton on Aug. 26 and two flocks totalling 110 adults near West Littleton in September. Two dark-mantled birds, probably of Scandinavian origin, noted at Rangeworthy, March 10 (JDRV).

In Bristol, at least 52 pairs nesting, most within a quarter mile radius; total of 173 adults or sub-adults was present within the area St Mary Redcliffe - Temple Meads - Tower Hill - Wine St - Baldwin St (AGSG). Last estimate of nesting pairs was of c.50 pairs in 1977.

SA A survey in Bath in 1978 showed 13 nests, 31 eggs laid, 19 young hatched and 15 fledged (Bath NHS, per RMC).

Two pairs nested on rooftops at Portishead Docks ((MD, GY). At the CVL roost, 150 counted on Feb. 4 and 4,200 on Sept. 30, but only some 400 at year-end. Some 50, Barrow Gurney Resrs., March 10. Dark-mantled birds noted at Hartcliffe, Bristol (one, Jan, 2 - PJC), at CVL (one, Jan. 7 - KEV; and two, March 17 - RMC); and at Bucklands Pool, Backwell, April 12 - 14 (two - SMT); see page 4.

HERRING GULL

NA Sixty-five (29 immature) on plough near Winterbourne, Sept. 15 - the only large flock reported except those at rubbish tips (see below, p. 32); 25 with Lesser Black-backs at Cold Ashton, Aug. 26. In Bristol, at least 63 pairs bred in the area described under the previous species; a total of some 300 birds counted there (AGSG). In 1977, 54 nests were located here with an estimated 325 adults.

SA A survey in Bath in 1978 showed six nests, 16 eggs laid, 14 young hatched and 13 fledged (Bath NHS, per RMC).

At Portishead Docks, 94 pairs nested on rooftops (MD, GY). At the CVL roost, only 35 were present on Feb. 4, and 700 in December. The largest inland flocks reported were 60 at Barrow Gurney Reservoirs on Aug. 26, a total of 94 near Failand on Sept. 30, and 38 at Ashton Gate, Bristol on Oct. 14. On a day visit to Steep Holm on July 14, at least 80 adult birds were seen to be dying or dead (JDRV); the cause was unknown. An adult was seen at Bristol Zoo on July 30, taking scraps of fish fed to seals. (SBE). Two adults with dark mantles and yellowish-green legs were noted at SGW on April 9 (MTD); another dark-mantled adult with yellow legs was at CVL on Dec. 17 and 30 (KEV). See page 4.

HERRING/GLAUCOUS GULL

SA On Jan. 11, 1978 KEV studied an adult bird at the CVL roost which resembled an adult Herring Gull except that its left wing showed almost no black, only slight sub-terminal dark markings, and its right wing showed less black than normal for a Herring Gull. The bird was possibly a Glaucous/Herring hybrid; hybrid Glaucous gulls are not infrequent at some Icelandic colonies.

GREAT BLACK-BACKED GULL

NA Recorded on the coast in most months, with one or two at Oldbury Power Station lagoon and Northwick Warth, and up to five from Severn Beach to Chittening, with eight there on July 8 (RGT).

SA Two at SGW, Jan. 21; a pair, Portbury, April 27; two at Brislington, Bristol on May 14 (PGF); one or two all year, Clevedon to Yeo Estuary; one, Bucklands Pool, Backwell, Feb. 18 and one in Axe Estuary on June 30. Two or three in most months at CVL, but up to six in February and four in December.

KITTIWAKE

NA Some 200 over R. Severn, Severn Bridge - Aust, on March 9 (NTL), after night of strong winds.

SA Birds were noted off Portishead, Sand Point or entering Avon waters off Brean Down between March 17 and Aug. 17; numbers ranged from one to 120 (on April 19), with most in April and a maximum of 30 thereafter. An immature bird was found dead on the tideline, Sand Bay, Dec. 21 (RA). At CVL, an adult, March 17 (N&LT); four on April 21-22 (RP, KEV); a first-summer bird on May 25 (KEV); an immature bird, Aug. 13-17 following gales (AHD, PAG, BJ) and another on Nov. 10 (KEV).

GULLS AT REFUSE TIPS

On Feb. 10 a co-ordinated count was made at Avon County refuse tips with the following results (AGSG):

	B-headed	Common	Lesser B-b.	Herring	Gt. B-b.
Almondsbury	450+	20	10	80	1
Bury Hill	600	34	28	14	0
Stockwood	375	65	11	5	0
Warmley	15	0	0	0	0
Failand	450	2	9	125	0
Hutton Moor	675	0	2	3500	0
South Stoke	6	1	0	10	0

GULLS AT ROOSTS

In December 1979 and January 1980 the Avon Gull Study Group carried out counts at all known roost sites in Avon, with the following results;

	B-headed	Common	Lesser B-b.	Herring	LBb/H**	Gt. B-b
Oldbury	2,675	182	4	14	5	1
Avonmouth	4,900	25	40	30	nil	15
Clevedon	520	nil	nil	20	nil	nil
Yeo Estuary	1,360	nil	nil	20	nil	nil
Axe Estuary	1,500	30	5	nil	nil	2
Steep Holm*	nil	nil	8	1,025	nil	5
CVL	17,650	11,750	420	700	250	4
Total	28,605	11,987	477	1,809	255	27

Notes ** These are immature birds in which the species cannot be distinguished

* The Steep Holm figures are based on counts from Anchor Head and Brean Down of birds feeding in Avon and flying out to roost on Steep Holm. The island is also used by gulls feeding in Glamorgan, so the figures do not represent the Steep Holm roost totals.

SANDWICH TERN

SA No spring records. At CVL, one on Aug. 17 (PA, BJG) and three, Sept. 30 (TBS). Birds seen off Portishead, Yeo Estuary, Axe Estuary or (entering or leaving Avon) off Brean Down: eight, Aug. 25 (BR); one, Sept. 16 (MSK); two on 23rd (TBS) and three to SW on 29th (RA).

COMMON TERN

Small numbers on coast, mainly in NA, from May 6-29 and June 17 - Aug. 4; maximum of four together was at Oldbury on Severn, May 29. At CVL, small numbers from April 17 (one early bird) to May 19; autumn passage from June 29 to Sept. 29 - four in July, up to five in August, 16 on Sept. 8 then up to three.

COMMON TERN or ARCTIC TERN

Noted on coast, May 6 - June 3, with maxima of 27 moving up channel off Brean Down, May 6 and ten at Oldbury on 24th, otherwise up to five. Two, New Passage, Aug. 10. At CVL, single birds were noted from April 21; large influx on May 1 - some 110 present; from that date, five to ten noted until July 10; small numbers present in August and September, the last (three) on Sept. 9.

LITTLE TERN

NA One, Northwick, May 19 (RGT); two, Severn Beach, Aug. 25 (BL).

SA One, Sand Point, May 7 (TBS); three, Blagdon Res. (SBE) and three at CVL (CFD), both on Sept. 23.

BLACK TERN

SA Spring passage recorded only at reservoirs, May 12 (two) - June 2 (one); large influx on May 13 - morning count of 13 at CVL reaching 76 by evening, also 13 at Blagdon.

Autumn passage, late June - Sept. 24, noted mostly at CVL, where many parties of up to 14. Single birds at Barrow Gurney Resrs., Aug. 19 and in Yeo Estuary, Sept. 2.

WHITE-WINGED BLACK TERN

SA At CVL, a juvenile bird was present from Sept. 7-10 and a second from the 8th-10th (AHD, RGT, KEV). At the Yeo Estuary a juvenile bird was seen on Aug. 19 (HER). [BBRC]

LITTLE AUK

NA One found exhausted at Tockington on Dec. 17 died on 18th (AEB).

STOCK DOVE

Reported throughout the year from many areas; breeding noted at 11 sites in NA and ten in SA; largest flocks reported were 36 at Littleton Warth (NA) on Oct. 28 and 50 at CVL (SA) on Dec. 10.

WOODPIGEON

Widespread reports throughout year; large winter flocks noted at Chittening (NA), with up to 200 in January, February and December; and at Kenn Moor (SA) with 300+ on March 17.

COLLARED DOVE

Well distributed throughout county. Large counts received: 38, Hambrook (NA), Sept. 22; and from SA, 39 at Sand Point, Sept. 22 and 78 a week later, 130 at Bleadon, Oct. 13, falling to some 30 on Nov. 17. These suggest a considerable movement.

TURTLE DOVE

Reported in period May 7 - Sept. 18, from seven locations in NA and 17 in SA.

CUCKOO

Widespread records received covering period April 14 - Sept. 13.

BARN OWL

NA Single birds reported from Thornbury, Pilning, the M5 (N. Bristol) and Lawrence Weston.

SA Reported from Corston, Claverton, Kelston, Odd Down, Keynsham, Blagdon, CVL, Gordano valley, Redhill and Weston-s-Mare.

LITTLE OWL

Reported from 19 locations in NA (with breeding at three sites) and from 23 locations in SA.

TAWNY OWL

Undoubtedly under-reported. Records cover nine localities (with one breeding site) in NA and 19 (with two breeding sites) in SA.

LONG-EARED OWL

SA One at CVL, April 21-28 (CN, KEV) - third record for Lake. One at Sand Point, Oct. 27 (TBS).

SHORT-EARED OWL

NA One - two, Aust to Avonmouth, from January to late spring (one seen at Chittening as late as June 12), and from October to December.

SA Two at SGW, January to April and in December - possibly the NA birds. Single birds noted from Yeo Estuary to Axe Estuary in January to March, at Clevedon and Sand Point in May and October to December, and inland at Whitchurch and CVL in February.

NIGHTJAR

SA A bird found exhausted at Keynsham, revived and released, May 15 (MJW). One heard at Wraxall on late date of Sept. 8 (HLH).

SWIFT

Well distributed throughout county. Earliest record was at CVL on May 2, where numbers reached 10,000 on June 22 and 5,000 on the 24th and 30th. Last report: one, Clevedon, Oct. 6.

KINGFISHER

Reported from all parts of the county, but breeding proved only at two sites in SA.

HOOPOE

NA Two, Blaise Woods, Bristol, April 19 then one until 30th (MD).

SA Single birds noted at Uphill on April 13, 14 (JJ, RS), at CVL on May 14 (per RJP) and at Sand Point on June 4 (RA, GWR).

WRYNECK

SA One at Sand Point, April 14 (GWR).

GREEN WOODPECKER

Resident; reported from 23 NA and 40 SA localities.

GREAT SPOTTED WOODPECKER

Reports from many localities throughout year.

LESSER SPOTTED WOODPECKER

Reports from, in NA, Hawkesbury, Coalpit Heath, Winterbourne Down and in Bristol from Moorgrove Wood (Henbury), Snuff Mills, Vassalls Park, Stoke Bishop, Durdham Down, Clifton; and in SA, Brislington (Bristol), Corston, Combe Down, Saltford, Leigh Woods, Abbots Leigh, Clevedon, Cleeve, CVL and Bishop Sutton.

WOODLARK

Uncommon passage migrant; noted in SA at Sand Bay, March 11 and Kenn Estuary, May 27 (single birds); and at Portishead, Sept. 17 and Portbury Wharf, Oct. 21 (two birds). (AH, WJH, HER).

SAND MARTIN

Recorded from March 26 to Oct. 27; did not breed at usual site in Glenfrome Rd, Bristol (NA); the only breeding record was of 11 pairs at Somerdale, Keynsham (SA), most rearing two broods.

RICHARD'S PIPIT

SA One, Steep Holm, Sept. 17, (AJP, DER). [BBRC]

TREE PIPIT

Reports of up to 22 migrants, April 10 - May 8 and Aug. 21 to Oct. 20 from five localities in NA and ten in SA. Breeding season records from Brockley Combe, Rowberrow, Clevedon and Sand Point, all in SA.

ROCK PIPIT and WATER PIPIT

NA Recorded on coast and on R. Avon at Sea Mills, January to March and October to end of year.

SA Bred at Sand Point. Water Pipits (up to eight) reported from Barrow, Blagdon and Chew Valley Reservoirs, January - April 9 and Sept. 30 - Dec. 31.

YELLOW WAGTAIL

Summer visitor and passage migrant. In NA, nine reports of up to eight birds between Littleton on Severn and Avonmouth. In SA, 127 reports, from SGW, Portishead, Clevedon, Nailsea and Kenn Moors, Sand Bay, Kewstoke, Uphill, CVL (where one bird remained into 1980), Chew Magna, Hunstrete, Compton Dando, Keynsham and Saltford.

PIED WAGTAIL

Common and widespread resident. Winter roosts in Bristol: 300 - 400 in Broadmead area, January and December, and 58 in Cumberland Basin area, Dec. 18. Pre-roost gatherings of 1,000 birds at Oldbury Power Station, December. At least 80 feeding on grazed kale field, Saltford, Dec. 10-20. Up to seven White Wagtails noted on coast and at reservoirs, April 5 - May 13.

DIPPER

One or two noted in NA at Shockerwick, Bitton, Huntingford and Snuff Mills, Bristol; and in SA at Winford (the only breeding record), Rickford, Wellow, Combe Hay and Midford.

NIGHTINGALE

Breeding-season reports of up to 12 from Thornbury, Charfield area, Kilcott, and Inglestone and Hawkesbury Commons (NA); and from Gordano Valley, Sand Point and Wellow (SA).

BLACK REDSTART

NA Reports of single birds, Jan. 3 - March 31, from Northwick Warth, Avonmouth, Clifton and City Docks (Bristol).
SA One, Compton Dando, March 31 and one, Clevedon, Oct. 28.

REDSTART

Passage migrant and decreasingly common summer visitor. Reports (26), April 11 - Oct. 7, of up to four, mainly birds on passage, from Hill*, Cromhall, New Passage, Filton and in Bristol from Stoke Park and Eastville (NA); and from Redcliffe St, Bristol (where a male was found dead on Sept. 24), Ashton Park*, Clevedon, Sand Point, Woodspring Bay, Publow*, Queen Charlton, Saltford and Odd Down (SA). Breeding season records marked *.

WHINCHAT

Passage migrant and uncommon summer visitor. Reports of up to five birds, April 15 - May 18 and Aug. 4 - Oct. 20, from Hawkesbury Common, Marshfield, Littleton Warth, Chittening and Filton in NA; and from Stockwood, Ashton Marsh, Nailsea, Kenn Moor, Clevedon, Sand Bay, Uphill, Chew Magna, CVL and Marksbury in SA. No proof of breeding.

STONECHAT

Reported in all months, but in much smaller numbers than usual. Successful breeding reported at Whitchurch and Burrington.

WHEATEAR

Numerous reports from 30 areas (15 in NA) of up to 15 birds on passage, March 18 - June 14 and July 3 - Oct. 28.

RING OUZEL

Uncommon passage migrant.

SA Two, Sand Bay, April 8, and seven, Shiplate Slait, April 13.

GRASSHOPPER WARBLER

Reports (46) of singing males, in NA from Hawkesbury, Inglestone Common, Tytherington, Thornbury, Tockington, Aust, Severn Beach, Chittening, Avonmouth, Lawrence Weston and Filton, and in SA from Sand Point and Bleadon, covering April 10 to July 26.

MARSH WARBLER

SA Single males of this rare summer vagrant were seen at CVL (AHD, KEV) and in the Gordano Valley (JWB), on May 19 and 20.

MELODIOUS WARBLER

SA One of this rare summer vagrant was seen at Sand Bay, Sept. 29 (TBS).

BLACKCAP

Passage migrant, summer visitor and increasingly common resident. Numerous records from country, town and city gardens in winter; nine ringed in December at Sneyd Park, Bristol (HRHL).

WOOD WARBLER

Up to five singing males noted, April 29 - July 1, in NA from North Stoke and Lansdown and in SA from Knowle (Bristol), Ashton Park*, Clarken Combe, Leigh Woods*, Abbots Leigh, Gordano valley, Sand Point, Brockley and Burrington Combes, and Rainbow Wood, Bath. Breeding confirmed where marked *.

CHIFFCHAFF

Passage migrant and widely distributed and common summer visitor; small numbers winter.

FIRECREST

Uncommon vagrant. Single birds recorded at Sand Point (SA) on eight dates between Oct. 21 and Dec. 29 (GWR, TBS, JW).

PIED FLYCATCHER

Single birds noted on passage, April 10 - May 13 and Aug. 3 - 11, in NA at Yate, Coalpit Heath, Vassalls Park (Bristol), New Passage and Severn Beach; and in SA at Leigh Woods, Abbots Leigh, Gordano valley, Sand Point and Hunstrete.

BEARDED TIT

SA Winter vagrant. Single birds recorded at CVL, Jan. 7 - Feb. 3 and up to nine there, Nov. 10 - Dec. 24 (eight trapped and ringed).

WILLOW TIT

Uncommon resident. The only record received was of one in Leigh Woods on Oct. 25. Confirmatory details are requested for records of this species.

GOLDEN ORIOLE

Rare summer vagrant. A female bird was found dead at Tockington, May 31 (AEB).

GREAT GREY SHRIKE

Rare winter vagrant. One between Clevedon and the Kenn Estuary, Oct. 28 (KJH).

CARRION CROW

Common resident. A Hooded Crow was noted at SGW, Oct. 24 (MD).

RAVEN

Regular visitor in small numbers. One or two reported in NA at Cromhall and Falfield, Jan. 26 - 30 and Aug. 22 - 27 (JH), and single birds in SA at Weston-s-Mare, Feb. 3 (RA) and at Sand Point on May 27 (PBK).

BRAMBLING

Noted at numerous NA and SA localities, on coast and inland, with flocks of up to 250, Jan. 6 - April 28 (88 reports) and up to 40, Oct. 6 - Dec. 25 (35 reports).

SISKIN

Widespread in NA and SA; 30 reports of up to 65, Jan. - April 15, and 39 reports of up to 35, Oct. 5 to end of year.

TWITE

Up to 35 noted on coast between Severn Beach (NA) and Yeo Estuary (SA), January to April 8 and Nov. 11 to year-end. Inland records of two, North Widcombe, Jan. 28 (KEV), one, CVL, Feb. 24 (N&LT) and six, Weston Moor, Dec. 29 (HER).

REDPOLL

Reported from 19 NA and SA localities, January to May 29 and Aug. 27 to Dec. 31; no evidence of breeding.

CROSSBILL

Single birds noted in NA at Hallen, Dec. 3 (NTL) and in SA at Abbots Leigh, Nov. 15 (TBS).

HAWFINCH

Up to four birds reported, Jan. 6 - May 2 and June 17 - July 28, in NA at Inglestone Common, Henbury, and Durdham and Clifton Downs, Bristol; and in SA at Leigh Woods, Abbots Leigh, Cadbury Camp, Weston-s-Mare, Chew Valley Lake and Freshford.

LAPLAND BUNTING

SA One seen at SGW, Jan. 6-13 (AH. AM, GP, GJU, KEV).

CIRL BUNTING

SA One, Sand Point, May 6 (TBS). Formerly bred regularly; now infrequently reported.

CORN BUNTING

Up to ten singing males reported, in NA from Hillesley, Tormarton, West Littleton and Marshfield, and in SA from Bleadon Hill, CVL and Burnett.

OTHER COMMON OR REGULARLY OCCURRING SPECIES PRESENT:

Residents: Pheasant, Skylark,* Meadow Pipit, Grey Wagtail, Wren, Dunnock, Robin, Blackbird, Song Thrush, Mistle Thrush, Goldcrest; Long-tailed, Marsh, Coal, Blue and Great Tits; Nuthatch, Treecreeper, Jay, Magpie, Jackdaw, Rook, Starling, House Sparrow, Tree Sparrow, Chaffinch, Greenfinch, Goldfinch, Linnet, Bullfinch, Yellowhammer, Reed Bunting.

Summer or winter visitors: Swallow, House Martin, Fieldfare,* Redwing*; Sedge,* Reed*and Garden Warblers; Lesser Whitethroat, Whitethroat, Willow Warbler, Spotted Flycatcher.

* referred to in Foreword

ERRATA AND ADDENDA, 1978 REPORT

Page	Species	
5	Great Northern Diver	For Dec. 23 read Dec. 3.
7	Canada Goose	Last line should read: *B. c. minima*.
10	Tufted Duck	In line 7 insert 490 after Total.
11	Ruddy Duck	In line 6 amend 305 to 325.
21	Turnstone	Add: SA Noted on coast all months; over eight only near Clevedon, where 20-30 up to April and 10-25 from August. At CVL, single birds, May 13, Aug. 5 and 16th, and Nov. 11.
22	Mediterranean Gull	Line 5 should read: Dec. 3 and 30th.
22	Little Gull	Add: NA One, Severn Beach, May 1 and 6th.
22	Black-headed Gull	In line 14, June 8 should read Aug. 6.
24	Glaucous or Iceland Gull	For June 2 read Feb. 6.
24	Common and Arctic Tern	After "often reported" add: 26 Arctic on Aug. 20.
25	Little Tern	Under NA add: 10, New Passage on May 2 (RGT).
25	Black Tern	Add: At Blagdon Res., five on Aug. 2, one on 20th, one on Sept. 16-17 and four on 26th.

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KESTRELS IN THE CITY OF BRISTOL

R. L. Bland

Between 1970 and 1979 I have conducted a survey on behalf of the B. N. S. Ornithological Section to assess the resident Kestrel population within the 12,000 hectares of the city of Bristol. In spite of their obviousness when hovering, Kestrels are quite elusive when close to their nest sites, and surprisingly few records may be produced by a pair nesting in the heart of a busy city. It is indeed most unusual to see more than one bird of a pair after display and mating (which often takes place very close to the nest site) until family groups of three or more birds appear in July. Thus a record of a single bird between March and the end of June is possible evidence of a breeding pair, and if single birds are recorded in the same locality during three of the four months of the breeding season this has been taken as sufficient evidence that a breeding pair is present. This criterion follows that used in Sussex (Shrubb 1970).

The survey method has been to request B. N. S. members to send in all records of Kestrel sightings within the city during the four months; typically this elicits about 100 records. These are plotted on a 1:50,000 Ordnance Survey map, and the points soon fall into clear groups. Additional evidence, such as a pair seen displaying or mating, or a bird carrying food, or a family party together, has often been available. Inevitably, many of the sightings submitted refer to a relatively few pairs whose nesting places put them in the public gaze. To counteract the bias this creates, I have made an attempt to cover most of the city personally each season.

Kestrels tend to be loyal to a nest site - certainly one has been used in ten consecutive years - so the knowledge acquired has been cumulative. As more and more actual sites have been discovered, it has been possible to allocate sightings to specific pairs and to concentrate attention on observations that do not fit the pattern. Most difficulty has been found in the central area, within 1 km of Bristol Bridge. This area, with its derelict dock and railway land, holds so many Kestrels that it is exceptionally hard to match pairs and sightings. By 1978, thirteen nest sites were known and there was evidence of nineteen other pairs, but not more than twenty-two territories had been held in any one year. There were fewer records in 1979, and at least three of the 1978 sites were not used. Eleven sites were occupied, however - ten of them in a 2,000 ha zone around the city centre, and three other pairs probably bred. (1979 seems to have been a poor year for Kestrel breeding, both in the city and in rural Avon).

Published data on the area required by a Kestrel pair vary from 5810 ha in London (Montier 1968) to between 900 and 250 ha in Sussex (900 on the Weald, 550 in Brighton and 250 on the Marsh)(Shrubb 1968). In suburban N. W. Kent, Burton (1950) found 850 ha. In rural Avon, Taylor (1967) found 2300 ha, averaged over three years, with an absolute maximum of 1800 ha. The figure for the whole of Bristol is 600 ha at the most, and only from 180 to 200 ha in the central area, apparently the highest density recorded. The Common Bird Census of the British Trust for Ornithology suggests that nationally there were 50% more Kestrels in 1977 than in 1966, but this is not enough to explain the fourfold difference between Kestrel density in Bristol now and in rural Avon in 1966. It may be that an urban area, with decayed buildings for nest sites and extensive derelict land where rodents and small birds may be readily caught, can provide a far better environment for Kestrels than an intensively cultivated rural area, in which the tree nest sites are often disputed with other species.

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THE STATUS OF WADERS ON SEVERNSIDE

R. G. Thomas

The shoreline of the River Severn between the southern end of Chittening Warth and the northern end of Aust Warth, a stretch of about eight kilometres and generally known as Severnside, supports a considerable number of waders on passage or wintering. The shore can be divided into three sections, which differ in significance to the wader population, viz.-

(a) the southern part, from Chittening to Severn Beach;
(b) a central section, between Severn Beach and New Passage;
(c) the northern section, comprising Northwick and Aust Warths.

The southern section supports the greatest number and variety of waders, because the ebbing tide very quickly exposes a considerable expanse of mudflats and gravel beds and banks. This section, which is about four kilometres in length, I shall generally refer to as Chittening, unless for a particular species that part near Severn Beach is of special importance. The central section, (b), is protected by a sea wall and at low tide very little mud is to be seen, the river bed being mainly covered by stones and gravel. Very few waders inhabit this part of the shoreline. The northern section, a distance of about three kilometres, supports fewer waders than the Chitteing section. Here the river bank is steeper and the ebbing tide takes longer to expose the mudflats, which at low tide are not as extensive as at Chittening. I shall refer to this section as Northwick unless Aust Warth is of particular significance.

Since 1968 I have regularly watched the waders of Severnside and have kept detailed records. From the information so obtained and from the records of others submitted for inclusion in the Avon (formerly Bristol) Bird Report, the present status of the waders of Severnside has been assessed, and is set out below in systematic order.

OYSTERCATCHER

An irregular visitor which has been recorded in all months. Numbers seldom exceed five but as many as 24 have been seen together.

LITTLE RINGED PLOVER

A rare passage visitor, not recorded until 1971. From then until 1979 it has been recorded on eight occasions, twice in the spring and the remainder in autumn. Three were seen together in August 1973; the other records were all of single birds.

RINGED PLOVER

A passage and winter visitor, the highest numbers occurring in autumn when counts of 600 are not unusual; as many as 1,500 were present in 1969. A few birds, probably non-breeders, may be present from mid-June to mid-July. The wintering population is generally between 20 and 50 birds.

KENTISH PLOVER

A very rare passage visitor, the only records being of single birds at Severn Beach in May 1947, May 1949 and August 1978.

DOTTEREL

Recorded once only - a single bird at Severn Beach from Sept. 14 - 17, 1974.

GOLDEN PLOVER

An irregular and uncommon passage and winter visitor in small numbers, mostly seen from August to October with Lapwing flocks.

GREY PLOVER

A passage and winter visitor in small numbers, generally not more than ten birds, though as many as 100 together have been known.

LAPWING

Highest numbers occur on autumn passage, when flocks of 1,000 may be seen at Northwick. In winter fewer are normally present, but as many as 5,000 may be in the area during very hard weather. Numbers at Chittening seldom reach 100 and are generally much less. The species has been recorded in all months, but very few are to be seen from March to June.

KNOT

An irregular passage and winter visitor, though it has been seen in every month. Flocks are usually under 20, but passage flocks from August to October have varied from 100 to 500 birds.

SANDERLING

A regular visitor on spring and autumn passage; there are two records also of single birds at Severn Beach in December. Numbers on passage seldom total as many as ten, but up to 23 have been recorded, and 80 on one occasion - in August 1972.

LITTLE STINT

Recorded in spring and autumn of most years, in very small numbers. Most sightings occur at Severn Beach, where a flock of fourteen was seen on one occasion. There is one winter record - a single bird present in December 1976.

CURLEW SANDPIPER

Mostly seen at Severn Beach during autumn passage, generally in ones and twos, though as many as fourteen together have been seen. In May 1978 single birds were seen on three dates, the first spring records since 1950. There is one winter record - a single bird, present in December 1978.

PURPLE SANDPIPER

A regular passage and winter visitor to Severn Beach, where it has been recorded from late October to late May. In spring, up to eleven have been seen together, but wintering birds usually do not exceed five.

DUNLIN

A passage and winter visitor and the most numerous wader to visit Severnside. The wintering population reaches 4,000 to 5,000 in most years, but up to 7,000 has been known. A few non-breeding birds are sometimes present between mid-June and mid-July.

RUFF

A very infrequent visitor on autumn passage, generally in ones or twos, but twelve together have been seen at Northwick.

JACK SNIPE

Recorded from September to March, with most records from Aust Warth, where up to twelve have been seen, but single birds may be found along the whole shoreline. The species has been much less frequent during the last two winters than previously.

SNIPE

A regular passage and winter visitor. Most records refer to single birds well spaced out; parties are seldom reported.

DOWITCHER sp.

One was seen at Aust Warth in October 1977, the details not being sufficient to differentiate with certainty between the Long- and the Short-billed species.

WOODCOCK

There are two records of single birds at Chittening, in November 1961 and February 1980.

BLACK-TAILED GODWIT

A scarce passage bird seen more often in autumn than in spring, and occasionally recorded in winter. Numbers rarely exceed twenty but there are two records of flocks in excess of a hundred.

BAR-TAILED GODWIT

A frequent visitor on spring and autumn passage, usually in parties of fewer than fifteen, though in spring flocks of up to 150 have been seen on odd occasions. Small numbers are sometimes seen in winter. The species has been recorded in all months.

WHIMBREL

A passage visitor recorded annually from mid-April to the end of May and again from the second week of July to the end of August, with one record for June and one for October. The great majority of records relate to single birds, but it is not unusual to see up to five, and on one occasion ten were seen together.

CURLEW

A passage and winter visitor, with a few non-breeding birds remaining between mid-April and mid-June in some years. The average wintering population is about 100, and passage counts can at their peak reach 200 birds.

SPOTTED REDSHANK

An infrequent passage visitor, seen more often in autumn than in spring, and more often at Northwick than at Chittening. Most records relate to single birds and none to more than three.

REDSHANK

A passage and winter visitor, with a few non-breeding birds remaining in some years between mid-April and mid-June. The normal wintering population is about 250 birds, and peak counts on autumn passage have reached 500 to 600.

GREENSHANK

An uncommon passage migrant recorded in May and from July to October, but not annually. Most records refer to single birds but five together have been seen.

GREEN SANDPIPER

An uncommon passage migrant recorded in March and from July to October, but not seen every year. Most records are of single birds, and all relate to birds flushed from the several pills which run into the river.

WOOD SANDPIPER

A rare autumn migrant. The first record was in August 1967, with others in July 1971, August 1977, October 1978 and August 1979. All related to single birds except the last one, which referred to two birds seen on one occasion.

COMMON SANDPIPER

An annual spring and autumn migrant, seldom in parties of more than three birds, though up to six together have been seen. This species is sometimes found along the open shoreline, but the great majority of records are of birds flushed from the pills.

TURNSTONE

An annual passage and winter visitor, with a few non-breeding birds remaining in some years between mid-June and mid-July. The usual wintering population is about 100 birds, and peak passage counts are generally 200-250, but 400 has been known. The main feeding area is on the gravel beds between Severn Beach and the I.C.I. outfall at Chittening, and less often on the rocky, weed-covered shore below the sea-wall at New Passage, but some birds may at times be found feeding on the open muddy shoreline in any part of the area.

GREY PHALAROPE

Not recorded since one was seen off Severn Beach, September 1951.

BRISTOL BOTANY IN 1979

BY A. J. WILLIS

(Department of Botany, University of Sheffield)

Overall the weather in 1979 was distinctly cold, with extremely severe conditions at the start of the year, fairly wet, but slightly more sunny than usual, although there was a rather poor summer. On average for the year, the temperature was 0.9°C colder than normal, the first six months being all below average temperature. It was particularly cold, with much snow, during January, February and March, the January temperature at Long Ashton Research Station (to which all meteorological records relate) dropping to -11.6°C, and the average for the month, in spite of well above normal sunshine, being little above freezing point (3.8°C colder than usual). Soil temperatures at 10 cm during January and February averaged only 1.1°C. Only July and the end of the year (October to December) were of above normal temperature, the last six months being fairly sunny. Total rainfall for the year was 969.2 mm, some 105% of average, March and May being particularly wet months, with about double the normal rainfall. July was the warmest and driest month, being sunny, with about one-third the average rainfall. The year ended relatively warm and sunny, although December was a wet month.

After the prolonged severe winter, not surprisingly the flowering season was a very backward one. Early flowering plants were at least a month late. Snowdrops in Compton Martin Wood, at Uphill and along the River Chew at Coley were not at their best until towards mid March. At Upper Langford *Helleborus viridis* was only just showing above ground at the beginning of March and *Daphne laureola* in Cheddar Wood was only in bud; also by 21 March *Hornungia petraea* was still at the bud stage in Leigh Woods (*R.S.C.*). The lateness of the season long persisted; in mid June at Cheddar very few plants of Cheddar Pink were in flower, *Galium fleurotii* and *Sedum forsteranum* were still in bud, while *Cochlearia officinalis* was still flowering both on the high cliffs and at the base (*P.J.M.N.*). On the other hand, *Tulipa* *sylvestris* flowered at Charfield at its usual time of the last week in April and early May; this plant is reported never to vary in its flowering time whatever the weather conditions (*R.S.C.*).

In a paper by D.E. Allen entitled 'The botanical family of Samuel Butler' in the *Journal of the Society for the Bibliography of Natural History*, Vol. 9, Part 2 (April 1979), pp. 133-136, reference is made to Rev. Thos. Butler. White (*Flora of Bristol*, p.633) records that Rev. Thos. Butler appeared to be the first to notice *Carex humilis* on Brean Down (in 1841). He was the son of the classical scholar Dr. Samuel Butler, famous as headmaster of Shrewsbury School (later bishop of Lichfield), and the father of the author Samuel Butler, well known for *Erewhon* and *The Way of All Flesh*. Rev. Thos. Butler married into the Bristol family of Worsley and his sister-in-law Miss Anna Worsley, later Mrs. Russell, supplied H.C. Watson with a catalogue of plants seen near Bristol. It was probably on a visit to his wife's family from his Rectory in Notts. that Rev. Thos. Butler had the opportunity to visit Brean Down.

White in his *Flora of Bristol* (p. 598) notes that *Juncus effusus* from Nailsea was strewn in St. Mary Redcliffe on Whitsundays. At least in the last two years (1978, 1979), the rush strewn was *J. inflexus* and was obtained from Yatton (*P.J.M.N.*). The circumstances of the change are uncertain, but it seems likely that there has been an alteration in the relative abundance of the two rushes, a probable decline of *J. effusus* being perhaps attributable to relative intolerance of drainage or modern agricultural methods (notably weed control).

In connection with conservation work relating to *Allium ampeloprasum* on Steep Holm, bulbs were found to produce offsets freely; it is hoped that it will be possible to increase the numbers of the plant on the island. Investigations on the propagation of *Carex depauperata* show that this plant is very susceptible to grazing (*R.S.C.*).

As in previous years, numerous reports indicate the continued existence of less common species in recorded sites. Examples include *Oenanthe aquatica* at Worle, *Scirpus fluitans* and *Carex rostrata* in Weston Moor, Gordano Valley, and *C. acuta* on the Berrow dunes (*R.S.C.*). Persistent in Leigh Woods are *Campanula trachelium, Vaccinium myrtillus* and *Sedum album* (*C.M.L.*). *Euphorbia lathyrus* is still in Home Wood, Warleigh, *Dipsacus pilosus* on the banks of the Chew near Pensford, where recorded by D. Fry in 1896, and *Verbascum virgatum* in Bath (*D.G.*).

Although the Bristol area is one of the botanically best known regions in Britain, interesting records continue to be made, even of native species, and of hybrids involving native species. Among taxa of note reported this year are *Hieracium salticola* at Pensford, × *Festulolium holmbergii* near Portbury Dock, and × *Agropogon littoralis* on the old Glastonbury Tip. The Brislington Tip and the Avonmouth Docks, keenly investigated by A.L. Grenfell and others, have continued to yield many unusual aliens. Among notable plants from the Brislington site are *Chenopodium ambrosioides, Panicum dichotomiflorum* and *Eragrostis cilianensis*. At Avonmouth Docks plants very rare in Britain recorded this year include *Amaranthus spinosus, Modiola caroliniana* and *Iva xanthifolia*.

In a paper on J.L. Knapp's *Gramina Britannica* by P.J.M. Nethercott in these *Proceedings* for 1976, local records of five grasses are mentioned. C.M. Lovatt reports that in Knapp's bound volume of grasses, presented to the Bristol Institution in 1824, and now in the Bristol Museum, there is a voucher relating to the Bristol area for only one of these records (*Puccinellia rupestris* collected by Knapp at 'Rownham Ferry and Clifton').

During recent work to improve safety from falling rocks on the Portway, a 'Devon Wall' was constructed below St. Vincent's Rocks. The wall, made of wire mesh and filled with rubble, was capped with a soil from 'near Gloucester' and for a brief period was red with *Papaver rhoeas* and *P. dubium;*

other introduced plants included *Iberis umbellata* and *Gnaphalium uliginosum* (*C.M.L.*).

An article by Lynda P. Smith on 'The distribution of common intertidal rocky shore algae along the south coast of the Severn estuary' (these *Proceedings* for 1978, pp. 69-76) gives information concerning the occurrence of sixteen species of common intertidal macro-algae (two green, six brown, eight red) in eleven stations from Sharpness to Kilve.

Names of contributors associated with several records, or with the determination of plants, are abbreviated thus:

J.A., Mrs. J. Appleyard
E.J.C., E.J. Clement
R.S.C., R.S. Cropper
A.F.D., Dr. A.F. Devonshire
T.G.E., T.G. Evans
G.W.G., G.W. Garlick
I.F.G., Miss I.F. Gravestock
D.G., D. Green
A.L.G., A.L. Grenfell
C.E.H., Dr. C.E. Hubbard
C.W.H., C.W. Hurfurt
C.M.L., C.M. Lovatt
P.J.M.N., P.J.M. Nethercott
R.M.P., R.M. Payne

G: Gloucestershire
S: Somerset

For details of the area covered by this Report, see *Bristol Botany in 1978*, p. 35.

Equisetum fluviatile L. Pool, East Harptree, S, *R.S.C.*

E. arvense L. A branched form, Malago Vale, Bristol, S, *I.F.G.* Also terrestrial form of *Polygonum amphibium* L. and *Bryonia dioica* Jacq.

Adiantum capillus-veneris L. Large colony, damp rocky banks of old railway cutting, Wells, S, *R.M.P.*

Ranunculus sardous Crantz Avonmouth Docks, G, *A.L.G.* Also *Chrysanthemum segetum* L.

R. trichophyllus Chaix Pool by railway line, Worle, S; also, with *R. circinatus* Sibth., in rhines, Tadham Moor, Somerset Levels, S, *R.S.C.*

Ceratophyllum demersum L. Cheddar Reservoir, S, *R.S.C.*

Fumaria muralis Sond. ex Koch ssp. *boraei* (Jord.) Pugsl. Abundant in potato crop, Market Gardens, Bromley Heath, Downend, G, *A.L.G.* One plant at junction of wall and pavement, Goose Green Way, Yate, G, *G.W.G.* Until recent years this fumitory occurred annually on disturbed ground in this site. Nearby, on a maintained grass verge, was *Trifolium striatum* L.

Rorippa islandica (Oeder) Borbás Cheddar Reservoir, S, *A.L.G.* and *I.F.G.* Also, with *Artemisia absinthium* L., on Bedminster Down Tip, S, *A.L.G.*

R. amphibia (L.) Bess. Riverbank adjoining Keynsham Lock, G, *C.W.H.* Also, established in the stonework of the lock, *Lycopus europaeus* L. and *Scutellaria galericulata* L.

Matthiola incana (L.) R. Br. Flowers white, with lilac tinge, scattered on cliff between Redcliff Bay and Black Nore Point, Portishead, S, *A.F.D.* These plants are probably garden escapes.

Sisymbrium officinale (L.) Scop. var. *leiocarpum* DC. Avonmouth Docks, G, *C.M.L.* and others. Also on disturbed ground, East Wood, Portishead, S, *P.J.M.N.*

Hypericum androsaemum L. East Twin Brook, Burrington, S, *P.J.M.N.*

Silene maritima With. Plentiful and vigorous on slag heaps in plantation, East Harptree, S, *R.S.C.*

S. alba (Mill.) E.H.L. Krause One large female plant with very laciniate flowers, on the bank of the Avon, near Barton Hill, Bristol, G, *A.F.D.* Each petal was deeply split into four, the two central segments being themselves forked.

Dianthus deltoides L. Bedminster Down Tip, S, *A.L.G.* Also *D. barbatus* L.

Spergula arvensis L. Bridge Valley Road, Avon Gorge, G; also introduced with trees planted on Ladies Mile, Clifton, and Durdham Downs, G, *C.M.L.*

Scleranthus annuus L. Two plants, with *Euphorbia exigua* L., grassy bend of Bridge Valley Road, Avon Gorge, G, *C.M.L.* *S. annuus* has not been seen on Brandon Hill in recent years.

Chenopodium polyspermum L. Camerton, S, and also Claverton, S, *D.G.*

C. ficifolium Sm. Sea Mills station, G, *I.F.G.* Also *Lathyrus sylvestris* L.

Geranium pyrenaicum Burm. f. Brislington Tip, S, *A.L.G.* Also *G. rotundifolium* L., *T.G.E.*

G. pusillum L. A small patch, Tytherington Hill, G, *R.S.C.* Also in this vicinity were *G. rotundifolium* L., *Salvia horminoides* Pourr., *Chrysanthemum parthenium* (L.) Bernh. and *Koeleria cristata* (L.) Pers.

Erodium moschatum (L.) L'Hérit. Brislington Tip, S, *A.L.G.* and *Mrs. O.M. Stewart.*

Medicago × *varia* Martyn Together with the parents, *M. falcata* L. and *M. sativa* L., Bedminster Down Tip, S, *A.L.G.*

M. lupulina L. var. *willdenowiana* Koch A densely glandular-hairy form, much smaller in all its parts than the type, in abundance, Avonmouth Docks, G, *A.L.G.* and *Lady Ricketts,* det. *E.J.C.* Also *M. polymorpha* L., *A.L.G.*

M. arabica (L.) Huds. Field gateway, Spaniorum Hill, Henbury, G, *G.W.G.* Also outside and within Bleadon Churchyard, S, *C.M.L.*

Trifolium medium L. Old tip, Lawrence Weston, G, *I.F.G.*

Lathyrus nissolia L. Abundant in long grass in roadside verges, Heron's Green, Chew Valley Lake, S, *R.M.P.*

L. sylvestris L. By path, Litton Reservoir, S, *R.S.C.*

Agrimonia odorata (Gouan) Mill. Bays Wood, near Horton, G, *Mrs. M.M.C. Reiss,* conf. *A.L.G.*

Sorbus torminalis (L.) Crantz A mature tree and two saplings, Bickley Wood, Hanham, G, *C.W.H.*

Sedum album L. Sand Point, S, *J. Warne,* per *A.L.G.* Probably introduced here.

Myriophyllum spicatum L. Barrow Gurney Reservoir, and also Litton Reservoir, S, *R.S.C.*

Hippuris vulgaris L. Kennet and Avon Canal, Bath, and Camerton, S, *D.G.*

Viscum album L. In 1978, on *Sorbus aria* (L.) Crantz, Burrington Combe, S, *C.M.L.*

Anthriscus caucalis Bieb. In quantity, Avonmouth Docks, G. *A.L.G.* Probably brought in with grain from the Mediterranean.

Crithmum maritimum L. Still persists at Battery Point, Portishead, S, *P.J.M.N.*

Oenanthe pimpinelloides L. Plentiful, Old Down, Stanton Drew, S, *R.M.P.*

Euphorbia platyphyllos L. Brislington Tip, S, *A.L.G.* and *Mrs. O.M. Stewart.*

Polygonum bistorta L. Large colony by roadside, East Harptree, S, *R.M.P.* Also by railway arch, Kilmersdon, S, *I.F.G.*

Rumex sanguineus L. var. *sanguineus* Brislington Tip, S, *A.L.G.* and *Miss M. McCallum Webster*. Regrettably the Hensman Memorial Church, Victoria Square, Clifton, site for this plant is now endangered. The church was pulled down some years ago, and a block of flats is now built on the area. However, two plants survived outside the grounds in May 1980, but the continued existence of the plant there is doubtful (*P.J.M.N.*). It must have persisted at this locality for well over half a century (see Riddelsdell *et al.*, 1948, *Flora of Gloucestershire*, p. 413, and J.E. Lousley, Notes on British Rumices: I, *B.E.C. Report for 1938*, Vol. XII, p. 129).

Primula veris L. × *vulgaris* Huds. With both parents, adjoining Blagdon Reservoir, S, *R.S.C.*

Lysimachia nummularia L. Pool by railway, Worle, S; with *Myosotis scorpioides* L., Chew Valley Lake and Blagdon Reservoir, S, *R.S.C.*

Verbascum virgatum Stokes A single plant, Brislington Tip, S, *T.G.E.*

Kickxia elatine (L.) Dumort. One plant in 1978, Black Rock Quarry, Avon Gorge, G, *C.M.L.* and *A.L.G.* Also on Portbury Tip, S, *A.L.G.*, with

Lepidium campestre (L.) R. Br., *Chenopodium polyspermum* L. (abundant) and *C. rubrum* L.

Veronica catenata Pennell River Kenn, Tickenham, S, *P.J.M.N.*

Verbena officinalis L. Clarken Combe, Long Ashton, S, *P.J.M.N.*

Prunella vulgaris L. Pale pink form, Inglestone Common, G, *Mrs. M.M.C. Reiss.*

Lamium hybridum Vill. Church Road, Stoke Bishop, G, *I.F.G.* Abundant, Market Gardens, Bromley Heath, Downend, G, *A.L.G.* and *M. Sell.*

Nepeta cataria L. Dean Hill, Lansdown, S, *D.G.*

Legousia hybrida (L.) Delarb. Freezing Hill, near Wick, G, *D.G.* This cornfield weed, like a number of others, seems much rarer than formerly.

Galium x *pomeranicum* Retz. Still on Observatory Hill, Clifton Down, G, where previously reported by N.Y. Sandwith (*Bristol Botany in 1962*), *C.M.L.* and *M.R. Lovatt.*

Valerianella carinata Lois. Persistent and now widespread in Clifton, Bristol, G, *C.M.L.*; in 1978, by railway, Cook's Folly, Avon Gorge, G, *C.M.L.* and *A.L.G.* In limestone wall, below Purn Hill, S, *C.M.L.* Abundant by railway, Keynsham; garden weed, Burnham-on-Sea; in rockery by seafront, Weston-super-Mare, S, *R.S.C.* White (*Flora of Bristol*, p. 360) reports this plant from rocks near Birnbeck, Weston-super-Mare. Also on Brislington Tip, S, *A.L.G.*

Dipsacus sativus (L.) Honckeny [*D. fullonum* L. ssp. *sativus* (L.) Thell.] Several flowering plants, Brislington Tip, S, *T.G.E.* Also many basal rosettes, *A.L.G.*

Senecio x *albescens* Burbidge and Colgan Towpath below Burwalls, Avon Gorge, S, *C.M.L.* and others, det. (*in situ*) *Dr. A.J. Silverside*, conf. *E.J.C. S. jacobaea* L. grows nearby and *S. cineraria* DC. is grown locally in gardens, *C.M.L.*

Filago minima (Sm.) Pers. Dismantled railway sidings, Sea Transport Stores, Yate, G, *G.W.G.*, conf. *A.J.W.* Nearby were *Vulpia myuros* (L.) C.C. Gmel., *Potentilla intermedia* L. and *Juncus tenuis* Willd.

Cirsium eriophorum (L.) Scop. Several plants in rough grassland, Tyley Bottom, Wotton-under-Edge, G, *R.S.C.*

Centaurea cyanus L. Brislington Tip, S, *A.L.G.* Also *Ranunculus arvensis* L., *Papaver lecoqii* Lamotte, *Geranium pyrenaicum* Burm. f., *Petroselinum segetum* (L.) Koch and *Hyoscyamus niger* L.

Lactuca virosa L. With *L. serriola* L., abundant on roadside from Black Rocks to St. Vincent's Rocks, Portway, Avon Gorge, G, *A.L.G.* and *C.M.L.*

Hieracium salticola (Sudre) Sell & West Disused railway line, Pensford, S, *I.F.G.*, det. *Dr. C.E.A. Andrews.* This locality is isolated from the main area of distribution of this Hawkweed in Central England, where it is locally common. Also at or near this site were *Arenaria leptoclados* (Reichb.) Guss., *Malva moschata* L. (very fine), *Geranium columbinum* L., *Polygonum convolvulus* L., *Echium vulgare* L., *Solidago virgaurea* L. (abundant) and *Erigeron acer* L.

Alisma lanceolatum With. Still at Horton, G, *Mrs. M.M.C. Reiss.* Also at edge of pool by railway, Worle, S, and at Blagdon Reservoir, S, *R.S.C.*

Butomus umbellatus L. Blagdon Reservoir, S, *R.S.C.* Also *Juncus compressus* Jacq.

Triglochin palustris L. Between Peasedown and Radstock, S, *D.G.*

Groenlandia densa (L.) Fourr. This pondweed may be declining in England and in the Bristol area. However, quite plentiful in a small pond, Stapleton, G. Also in fair quantity in rhine, Tickenham Moor, S, *P.J.M.N.*

Paris quadrifolia L. Swainswick, S, *D.G.*

Ophrys apifera Huds. More than a hundred spikes on roadside bank, Cold Ashton, G, *C.W.H.* Increasingly rare on Clifton Downs, Bristol, G, where only a single rosette seen, *C.M.L.*

Dactylorhiza fuchsii (Druce) Soó Separated from a large colony of spotted orchids were two plants with pure white flowers with no trace of marking, and with slightly spotted leaves, on scree slope, Goblin Combe, S, *A.F.D.*

Typha latifolia L. Tyley Bottom, Wotton-under-Edge, G. Also pool on Potter's Hill, near Lulsgate, S, *R.S.C.*

Eriophorum vaginatum L. Several tussocks, pool, Smitham Hill, East Harptree, S, *R.S.C.*

Scirpus lacustris L. Tyley Bottom, Wotton-under-Edge, G. Also, with *Bidens tripartita* L., Chew Valley Lake, S, *R.S.C.*

Carex hostiana DC. A few plants, wet meadow, Churchill, S, *R.S.C.*

C. binervis Sm. Several plants, woodland ride, East Harptree, S, *R.S.C.*

C. lepidocarpa Tausch Foxcote, S, *D.G.*

C. strigosa Huds. Tellisford, S, *D.G.*

× *Festulolium holmbergii* (Dörfl.) P. Fourn. This hybrid between *Festuca arundinacea* Schreb. and *Lolium perenne* L. was present at the approach to Portbury Dock, S, *T.G.E.* and *A.L.G.*, det. *C.E.H.*

Puccinellia distans (L.) Parl. With *P. rupestris* on towpath below Old Sneed Park, G, *A.L.G.*, *C.M.L.* and others. Brislington Tip, S; also site of the old Glastonbury Tip, now pasture, S, *A.L.G.*

P. rupestris (With.) Fernald & Weatherby Demolition site, Avonmouth Docks, G, *A.L.G.* Probably carried by birds from native populations in the vicinity. Abundant at side of road and adjoining waste ground near Pill, S, *C.M.L.*

Poa subcaerulea Sm. Wall, Bridge Valley Road, Bristol, G, *A.L.G.* and *C.M.L.* Also at two sites in Fishponds, Bristol, G, and on Strontia waste, Wickwar, G, *A.L.G.* Abundant in Sand Bay, S, *A.L.G.*

Catabrosa aquatica (L.) Beauv. Swampy field below Cleeve Wood, near Willsbridge, G, *C.W.H.*

Bromus madritensis L. Abundant near Horseshoe Bend, Shirehampton, G, *C.M.L.*, who reports that the plant was collected from this locality in 1932 by A.J. Wilmott (Herb. BM).

B. lepidus Holmberg Many plants on roadside leading to Brislington Tip, S, *T.G.E.*

Calamagrostis epigejos (L.) Roth Small patch, Goblin Combe, S, *R.S.C.* Also Kewstoke Woods, S, *A.L.G.*

× *Agropogon littoralis* (Sm.) C.E. Hubbard (*Agrostis stolonifera* L. × *Polypogon monspeliensis* (L.) Desf.) Old Glastonbury Tip, S, *A.L.G.*

Polypogon monspeliensis (L.) Desf. In quantity, Avonmouth Docks, G, *A.L.G.* Brislington Tip, S, *T.G.E.* and *A.L.G.* Also old Glastonbury Tip, S, *A.L.G.*

Alopecurus bulbosus Gouan Persistent and locally plentiful in grazed salt marsh, Pill, S, *C.M.L.*, where first recorded by the Misses Cundall (see White, *Flora of Bristol*, p. 644). Also at this site were *Trifolium fragiferum* L., *Bupleurum tenuissimum* L. and *Parapholis strigosa* (Dumort.) C.E. Hubbard.

Parapholis strigosa (Dumort.) C.E. Hubbard Brislington Tip, S, *A.L.G.* and *R.M.P.*

ALIENS. *Pteris cretica* L. Gough's Cave, Cheddar, S, *R.M.P.*

Consolida ambigua (L.) P.W. Ball & Heywood [*Delphinium ajacis* auct.] Brislington Tip, S, *T.G.E.* and *A.L.G.*

Arabis caucasica Willd. Long known to be well established on St. Vincent's Rocks, Avon Gorge, G. Also beside the Bridge below Burwalls, S, *C.M.L.* Other garden plants in the vicinity of the Gorge include *Iberis sempervirens* L. (Clifton Down, G), *Silene armeria* L. (near the Gully, Clifton Down, G), *Anemone apennina* L. (in 1978 in quarry below Burwalls, S, but not persisting), and *Solidago canadensis* L. (Observatory Hill and Cook's Folly, G, and also below Burwalls, S), *C.M.L.*

Erysimum cheiranthoides L. On tipped material, Combe Hay, S, *D.G.*

Malcolmia maritima (L.) R. Br. Avonmouth Docks, G, *A.L.G.* Also *Vicia tenuifolia* Roth.

Silene pendula L. Claverton, S, *D.G.*, det. *E.J.C.*

Lychnis coronaria (L.) Desr. A small, well-established patch on dunes, Sand Bay, S. Also Bedminster Down Tip, S, and Brislington Tip, S, *A.L.G.*

Cucubalus baccifer L. In 1978, at side of approach road to Portbury Dock, S, *Dr. M.C. Smith*, per *A.L.G.* Not seen in 1979.

Montia perfoliata (Willd.) Howell A large clump, Canford Park, Westbury-on-Trym, G, *Mrs. W.M. Cummins.*

Amaranthus blitoides S. Watson Brislington Tip, S, *A.L.G.*, det. *E.J.C.* Also *A. hybridus* L.

A. spinosus L. Two plants, demolition site, Avonmouth Docks, G, *A.L.G.*, det. *E.J.C.* This Pigweed from India is rarely seen in Britain. Also *A. albus* L.

Chenopodium glaucum L. A single plant, Avonmouth Docks, G, *A.L.G.*

C. ambrosioides L. A single plant, Brislington Tip, S, *T.G.E.*, conf. *E.J.C.* There are very few British records of this highly aromatic, polymorphic weed species of tropical America. An illustration of the plant by *T.G.E.* is given under *Aliens and Adventives*, compiled by *E.J.C.*, in *B.S.B.I. News*, April 1980, No. 24, pp. 14-18.

Salsola kali L. ssp. *ruthenica* (Iljin) Soó (*S. pestifer* A. Nelson) Avonmouth Docks, G, *A.L.G.*, conf. *E.J.C.* Also in quantity, probably from the Mediterranean, were *Cicer arietinum* L., *Trigonella foenum-graecum* L., *Phalaris minor* Retz. and *Triticum durum* Desf.

Kochia scoparia (L.) Schrader *sensu lato* Avonmouth Docks, G, *A.L.G.*

Malva nicaeensis All. Demolition site, Avonmouth Docks, G, *A.L.G.*, conf. *E.J.C.* Also *M. pusilla* Sm., *A.L.G.*, conf. *E.J.C.* and *M. parviflora* L., *A.L.G.*

Abutilon theophrasti Medic. Two flowering plants in potato crop, Market Gardens, Bromley Heath, Downend, G, *A.L.G.* Also abundant at Avonmouth Docks, G.

Modiola caroliniana (L.) G. Don fil. A single plant of this North American member of the Malvaceae, new to the list of adventives of the Bristol area, demolition site, Avonmouth Docks, G, *A.L.G.*, det. *E.J.C.* (in the absence of flowers and fruit).

Sidalcea oregana (Nutt.) Gray Bedminster Down Tip, S, *A.L.G.*, det. *E.J.C.* Also *Linum usitatissimum* L., *Vicia villosa* Roth ssp. *villosa* and *Coriandrum sativum* L.

Trifolium resupinatum L. A single plant, Avonmouth Docks, G, *A.L.G.*

Coronilla varia L. Garden weed, Timsbury, S, *D.G.*

Lathyrus latifolius L. Roadside, Stanton Wick, S, *R.M.P.*

L. grandiflorus Sibth. and Sm. Near Christ Church, Clifton Down, G, *C.M.L.*, det. *A.L.G.*

Rubus laciniatus Willd. In 1977, the Gully, Clifton Down, G, *C.M.L.*, *Dr. L.C. Frost* and *Dr. M.H. Martin*, conf. *A. Newton*.

Cotoneaster simonsii Bak. Rubbish tip, Kingsweston, G, *I.F.G.*

C. franchetii Boiss. Bird-sown on bank of the New Cut, Bristol, S, *A.L.G.* Also towpath, Leigh Woods, S, *C.M.L.*, det. *E.J.C.*

Sedum reflexum L. Locally abundant in dense patches, flowering well, below St. Vincent's Rocks, G, *C.M.L.* In contrast, the native *S. forsteranum* Sm. is scattered across the whole of the rock, in small patches, flowering rather sparsely.

Peltiphyllum peltatum (Torrey) Engler Marshy depression in woodland, Charterhouse, S, *J.A.* and *R.M.P.*

Lythrum junceum Banks & Solander Brislington Tip, S, *A.L.G.* Also *Hirschfeldia incana* (L.) Lagr.-Foss., *Dianthus barbatus* L., and *Centaurea montana* L.

Ammi majus L. A single plant, Brislington Tip, S, *T.G.E.*

Heracleum mantegazzianum Somm. & Levier Roadside, Dyrham, G, *I.F.G.*

Polygonum baldschuanicum Regel (*P. aubertii* Louis Henry) Redcliff Bay, S, *P.J.M.N.*

Cannabis sativa L. Two plants in the Gully, Durdham Down, G, *A. Byfield*, per *C.M.L.*

Ceratostigma plumbaginoides Bunge A very large plant, possibly bird-sown, in churchyard wall, St. Cuthbert's Church, Wells, S, *K.E. Bull*, per *R.M.P.*

Buddleja alternifolia Maxim. Bedminster Down Tip, S, *A.L.G.*, conf. *E.J.C.* New to the Bristol area, and possibly to Britain. Also *B. davidii* Franch., including the white form.

Solanum nitidibaccatum Bitter Several plants, with *S. nigrum* L., in marrow crop, Market Gardens, Bromley Heath, Downend, G, *A.L.G.*, conf. *Dr. Jennifer M. Edmonds*. Bristol gatherings of *S. sarrachoides* Sendtn. may be referable to this taxon.

Datura stramonium L. var. *tatula* (L.) Torrey Avonmouth Docks, G. *A.L.G.*

Salvia viridis L. (*S. horminum* L.) Portbury Tip, S, *A.L.G.* Also *Borago officinalis* L. and *Datura stramonium* L.

Phuopsis stylosa (Trin.) B.D. Jackson Railway track, Midsomer Norton, S, *L.G.*, det. *E.J.C.*

Galinsoga ciliata (Raf.) Blake Adjoining Colston Hall, Bristol, G, *I.F.G.* Single plant, riverside, Willsbridge, G, *C.W.H.* Also, despite thorough weeding in 1978, reappeared in Keynsham Park, S, *C.W.H.* Brislington Tip, S, *A.L.G.*

Ambrosia artemisiifolia L. Demolition site, Avonmouth Docks, G, *A.L.G.* Also *Artemisia biennis* Willd. in abundance.

Solidago gigantea Ait. Below Cook's Folly, Avon Gorge, G, *C.M.L.*, det. *E.J.C.*, and Avonmouth Docks, G, *A.L.G.* Also below Burwalls, Avon Gorge, S, *C.M.L.*

Centaurea diluta Aiton Marshfield, G, *D.G.*

Tragopogon porrifolius L. A number of plants, probably a fairly new arrival, near Severn House Farm, near Berkeley, G, *P.J.M.N.* Also two plants, Southfield Road, Westbury-on-Trym, G, *C.S. Carlile.*

Lactuca tatarica (L.) C.A. Mey. Old tip, Lawrence Weston, G, *I.F.G.* and *Mrs. A. Royle,* det. *E.J.C.* Previously known from Avonmouth Docks. Also atypical form of *Erigeron philadelphicus* L., *I.F.G.,* det. *E.J.C.*

Iva xanthifolia Nutt. A single plant, demolition site of the BOCM and Silcocks Mills, Avonmouth Docks, G, *A.L.G.* This annual wind-pollinated North American Composite, the Prairie Ragweed, related to *Ambrosia,* is a great rarity in Britain.

Hemerocallis fulva (L.) L. Beside Portway below Bridge Valley Road, Avon Gorge, G, *C.M.L.* Also a well established group on roadside, Brislington Tip, S, *T.G.E.*

H. lilioasphodelus L. A few plants, well naturalized, Charterhouse, S, *R.M.P.*

Allium roseum L. ssp. *bulbiferum* (DC.) E.F. Warb. Two plants by the Avon, Ashton Fields, Bristol, S; also naturalized in Bleadon Churchyard, S, *C.M.L.*

Sisyrinchium striatum Smith Bedminster Down Tip, S, *A.L.G.* Also *Gladiolus byzantinus* Mill.

Lolium temulentum L. var. *arvense* Liljebl. One plant, with *Phalaris canariensis* L., by Portway under Clifton Suspension Bridge, G, *C.M.L.* These plants may have been introduced with straw bales used to protect machinery during the removal of dangerous rocks.

Bromus willdenowii Kunth (*B. unioloides* Kunth) Brislington Tip, S, *A.L.G.* Also *Lagurus ovatus* L.

Hordeum distichon L. Steep Holm, S, *R.S.C.* No doubt a bird-sown casual.

Eragrostis cilianensis (All.) Lutati Spikelet length, known to be very variable in this tropical and warm temperate weed species, was 0.4 - 0.5 mm in 1979, compared with 0.9 mm in 1978, Brislington Tip, S, *T.G.E.*

Panicum miliaceum L. var. *compactum* Koern. Three plants, Brislington Tip, S, *A.L.G.* and *T.G.E.* This variety also on the Portbury Tip, S, *A.L.G.*

P. dichotomiflorum Michx. Brislington Tip, S, *T.G.E.* and *A.L.G.*, det. *C.E.H.* A first record of this annual North American grass, a colonist of disturbed ground, in the Bristol area.

Echinochloa crus-galli (L.) Beauv. var. *breviseta* (Doell.) Niels. Brislington Tip, S, *A.L.G.*, det. *C.E.H.* Numerous on the tip was a form with long awns; also present were two plants of var. *mutica* Hack., *T.G.E.*, conf. *C.E.H.*

Digitaria sanguinalis (L.) Scop. Numerous in 1978 and 1979, Brislington Tip, S, *A.L.G.* and *T.G.E.*, det. *C.E.H.*

Setaria viridis (L.) Beauv. A long-bristled variant with purple awns, abundant and widespread, Brislington Tip, S, *T.G.E.*

Sorghum halepense (L.) Pers. forma *muticum* Many plants, Brislington Tip, S, *A.L.G.* and *T.G.E.*, det. *C.E.H.* Also a few plants with long awns, *T.G.E.*

BRYOPHYTE: *Funaria pulchella* Philib. Black Rock Gully, Avon Gorge, G, *J.A.* This taxon, closely related to *F. muhlenbergii* Turn., was recorded from Clevedon last year.

I thank everyone who has supplied records and helped with these, especially Mr. A.L. Grenfell and Mr. P.J.M. Nethercott. I am indebted to Long Ashton Research Station for the supply of meteorological records.

AVON MAMMAL REPORT 1979

by

A. F. JAYNE

A modest number of 27 mammal species was recorded in Avon during 1979. This does not include the wallaby, reported in the local press as being killed in a country lane near Englishcombe, Bath. The unfortunate animal had previously been reported missing from a private collection. Species not accounted for this year include the yellow-necked mouse which is locally confined to mature deciduous woodland and is normally only seen when caught during live-trapping operations. Only one deer species, the roe, was reported in the wild.

The highest number of records, 977, received for any one year include a few from just outside the County boundaries. From a mammal distribution point of view the habitat is more important than a mere man-made line on a map. The highest ever figure is explained by the substantial increase in the numbers of hedgehog and mole observations. Indeed reports of small mammals show a considerable decrease.

Many thanks are due to the support of the 80 observers listed below:-

Mrs. J. Andrews, A. J. Aston, Mrs. M. H. Badger, Miss Banton, K. Batty, Mr. Boakes, N. Boosey, N. Bridges, Mrs. M. Browne, *R. A. Burberry, R. J. Burberry, Mrs. R. Burberry, Mrs. V. M. Burberry, J. F. Burton, *Mrs. D. Catley, *P. J. Chadwick, G. E. Clothier, J. Coffin, M. Coffin, Miss D. Davey, A. Dowdall, S. B. Edwards, Mrs. S. J. Evans, P. G. Farmer, A. Fisk, Mrs. P. R. Foster, Miss D. Fowler, R. A. J. Giles, Mrs. D. Grant, J. Grant, Miss I. F. Gravestock, A. L. Grenfell, Mrs. D. Grenfell, D. A. Griffiths, *H. R. Hammacott, *Dr. S. S. Harris, Miss C. J. Haskins, Miss S. Haseldine, B. Hillyer, L. Horton, Miss M. Hosie, Miss E. Humphris, *Mrs. J. Humphris, Mrs. Kendall, Miss L. Keitch, Mrs. C. Kitchen, *M. A. Kitchen, P. James, *A. F. Jayne, *Mrs. P. Jayne, *Miss H. Jayne, Miss R. C. Lee, *Miss E. J. Lenton, J. S. Lewton, S. Lonsdale, N. McKenna, Miss A. Mahood, T. Male, *H. C. Morris, Mrs. K. Morris, G. Nicholson, Mrs. L. Parkinson, *J. C. Phillips, Mrs. S. Pike, R. H. Poulding, *Dr. H.E. Rose, I. Scapens, P. Sherlock, Mr. & Mrs. Smeed, D. V. Smith, E. S. Smith, G. Smith, A. Stanton, B. Stanton, Mrs. M. Stanton. D. Troake, F. White, Mrs. M. G. Wildgoose, *R. Wildgoose, Mrs. B. Williams.

Those whose names are prefixed with an * contributed 10 or more records.

I. HEDGEHOG. The 258 records submitted were by far the highest number in any one year, being almost double that of the previous highest (132 in 1978). The number of observers was only marginally higher at 30 against 26. I have meticulously noted each road casualty seen by myself over the past two years and saw 130 throughout this year against 78 in 1978. Even allowing for the vagaries of the recording system it would appear that 1979 was an abundant year for this species. Over 90% of the records were of dead animals on the roadways with a peak occurring in August and early September. Records were received for all months of the year.

An unusual account was received of a "young hedgehog, about four inches overall length," being found in a Clevedon garden on January 9th (K.B.). This youngster had survived through a spell of bitter weather, with frost and snow. It was taken into a greenhouse and was thriving on a diet of bread and milk and minced raw meat. A female with four small young was seen in long grass between a hedge and a garden shed in Thornbury (D.F.) whilst in another Thornbury garden an adult was rescued from a "bean net" in which it had become enmeshed (M.H.B.). A nest was found underneath a water tank in the next garden. Several live ones were seen in the streets of Chipping Sodbury (R.W.), one of which held up the main road traffic near the war memorial at 8.30 p.m. on 31st July. Another was seen to suddenly run from the pavement, along which it had been ambling, into the road and underneath the wheels of an approaching car. The driver did not appear to see it or realize he had squashed it. Two children were seen escorting one from a busy road through Winterbourne Down into a nearby garden at 9.00 a.m. one morning (A.F.J.). An adult with young was seen several times in a Westbury-on-Trym garden where a large nest was found in a strawberry bed. An emaciated corpse was found in the open ground in Eastville Park, (C.J.H.) following a long dry spell in mid July. There were no visible signs of injury. Two were found hibernating in garden sheds, one near the Downs in March (L.P.) the other at Lawrence Weston in early October (I.F.G.).

AVON MAMMAL REPORT

2. MOLE. Molehills were sighted over a widespread area covering 19 ten-kilometre squares.

3. COMMON SHREW. Of the fifteen records received, seven were of remains found in bottles (A.F.J.). A body seen in the garden of the Lodge at Whitcliff Park, near Berkeley had been caught and left uneaten by the cat. This is commonly the case with insectivores which are caught by carnivorous animals. The same applies to insectivorous birds such as robins and starlings. Two common shrews were caught in a single "Flap" trap during a survey in Littleton Nature Reserve (R.A.B./A.F.J.). One had survived by canibalism of the other, which was half eaten - the skin being partly turned neatly inside out. This unfortunate animal may well have been dead before the other entered. Another was caught in a break-back trap in a Nailsea garage (H.R.H.). The others were dead animals seen, one on the pavement in Lower Almondsbury (P.J.), two in the middle of droves on Nailsea Moor (H.R.H.) and one at Shiplate (P.J.C.).

4. PYGMY SHREW. Only four reports during the year. One skull was found in a bottle at Rudgeway (A.F.J.), one was trapped at Nailsea (H.R.H.) and two bodies were seen, the first at Winterbourne Down (H.J.), the second at Black Rock Nature Reserve (A.F.J.).

5. WATER SHREW. A skull was identified from a bottle in an Alveston layby (A.F.J.). A small animal was seen swimming in the River Frome at Winterbourne Down which subsequently was seen to be a water-shrew (A.F.J.). Attention was first drawn to it as it was noticed making steady headway against the considerable current at this point of the river. It swam out into mid-stream several times, sometimes on the surface and sometimes under-water. The water was clear and shallow, bubbling over the stony river bed. The shrew was clearly visible under the surface and at times could be seen foraging among the stones on the bottom. It made better progress against the current whilst under the surface. On a number of occasions it swam several yards up-stream in the centre of the river, then allowed the current to take it back down and into the bank, whence it landed and spent some time hunting through the crevices of a dry stone wall which is at the waters edge at this point. As it worked along this wall the demarcation line of its black upper surface fur and its silvery-grey under fur was clearly visible. It was watched for about ten minutes from a distance of a few yards.

BATS. Records were received of unidentified bats in flight from several locations; the latest being a single small one flying around a house at Cromhall on November 3rd.

8. GREATER HORSESHOE BAT. Two roosting locations of small numbers were investigated, in a cave at Upton Cheyney and in a cellar at

Lansdown (M.B.).

19. PIPISTRELLE. Caught whilst flying around a bathroom in a house at Fiddlers Bottom, Nr. Cromhall. It was identified and released outside, unharmed, (E.H./J.H.).

21. LONG-EARED BAT. Several were seen roosting in the same cellar on Lansdown as greater horseshoes, (M.B.).

24. FOX. Fifty-three observers submitted reports, the majority of which were urban/suburban sightings. The urban fox is no longer a phenomenon and the high number of day time sightings indicate its increasing numbers and adaptation to its new mode of life. It is, nowadays, much easier to see foxes within the city than in the surrounding countryside and it is becoming increasingly obvious that their density is much greater in the built-up environment.

We are fortunate in having Dr. Stephen Harris working on a detailed study of our Bristol foxes. Much of the hitherto little know ecology and way of life of these recent town dwellers is being unearthed.

A large number of cubs were caught and ear-tagged in the early summer months. It is hoped to recover as many as possible to add considerably to the existing information of the dispersal of cubs on the break-up of family units and of the mortality rate and life expectancy of these cubs. As most recoveries are of dead animals, usually road casualties, it is important that any sightings of such, either in or adjacent to the city, should be reported to Dr Harris at the University (PHONE 24161 Ex 802). It is also important to report any known litters of cubs, or suspected breeding places, as early as possible to enhance a successful capture. The study work is scheduled to continue over several more years. I am indebted to Dr Harris for much information he has given to me and for the opportunity to accompany him on a number of his enterprises.

The density of foxes within the sub-urban boundaries is indeed staggering as may be illustrated by the following. In a triangular area between Filton and Horfield bounded by the A38 (Filton Road/Gloucester Road North), Southmead Road and Monks Park Avenue at least five different litters of cubs were known to exist. The area is considerably less than one square kilometre which compares with an approximation of a truly rural density of about one breeding earth per one square kilometre. Three of these litters were caught and ear-tagged at about eight weeks old in early May. Two of these, from different litters, were subsequently recovered, within 100 metres of each other, as road casualties on the A38, on succeeding days, July 2nd and 3rd. This is not selected as the highest density area but rather as a typical housing-estate style development area. The numbers are almost certainly higher in the North-Western sector of Bristol which encompasses the districts of Westbury-on-Trym, Stoke Bishop and Coombe Dingle, an area with many large gardens and grounds and with semi-natural areas not readily accessible to the public.

The location of breeding dens varies considerably and reflects the initiative and adaptability of this creature. The most commonplace site is underneath garden sheds, both in large and small gardens. Other popular sites include piles of junk and holes dug in derelict or overgrown gardens. In the urban centres a fox will readily gain access to buildings through broken ventilation bricks or grilles which afford it a warm, dry shelter under the floorboards.

Of the 187 records submitted 41 were of road casualties, 14 of these being on the M32 between Hambrook and Eastville. Nine others occurred on motorways. More than half these casualties occurred during June to August, the months when fully weaned cubs would be moving on their own.

The overall records were from 121 one-kilometre squares which were spread over 14 ten-kilometre squares.

27. STOAT. Two road casualties were seen just outside the Avon County boundary, one near Gurney Slade, the other at Berkeley Road (A.F.J.). An adult and juvenile were seen together on Brean Down (C.J.H.). A "great commotion" amongst a group of free-ranging poultry at the edge of woodland at Cromhill alerted the owner who found one of the hens with a stoat attached to its neck. As it let go a second stoat appeared and together they attacked a cockerel. They were eventually driven off leaving the poultry in a terrified state (J.H.).

28. WEASEL. Nine of the 16 reported sightings were of animals running across roads. One of them was noticed carrying a small mammal at Kenn Moor (J.C.P.). Two were seen in gardens in the Thornbury area (M.H.B., V.M.B.) and one at Itchington was caught and killed by a cat (N.B.). During a bird-ringing session at Littleton-on-Severn a weasel was found endeavouring to remove a blue-tit from the bottom shelf of a mist net. The blue-tit was found to be dead so it was left on the ground under the net. At the next net inspection, half an hour later, it was gone. One was noticed dead on the road at Wraxall (P.J.C.).

30. MINK. Two sightings of tracks were reported from near Chew Magna (E.J.L.). One adult was seen to climb from the River Avon at Grosvenor Bridge, Bath (2 kilometres from the City centre) onto a partly submerged willow branch. After five minutes it went onto the bank where it picked up a large eel, returned to the river, and swam off with it downstream (P.J.). Another mink was noticed swimming in the River Kenn carrying an eel in its mouth before disappearing under willow roots (H.R.H.).

31. BADGER. Many fewer reported than in previous years, with only one reference to cubs (C.J.H.). The Section did not hold any of the customary evening badger watches this year.

An unusual occurrence of badger behaviour was noted by Mr. Martin Jones of Backwell. He was walking on the snow covered ground above the village at about 8.45 a.m. on February 11th, when he noticed the body of a badger about fifteen yards away from entrances to a large sett. It had been severely bitten around the neck. Imprints in the snow showed that it had been dragged from the sett by other badgers. Passing by about six hours later Mr Jones was amazed to find that it had been dragged a short distance into the wood and completely covered with snow, pine needles and leaves. All the surrounding prints were clearly of badger (G.E.C.).

Dr Harris is also conducting a comprehensive study of surburban badgers and has discovered many setts within the City boundaries, particularly in the North-West sector. An interesting animal caught by Dr Harris in a Stoke Bishop garden had reddish fur over its back from behind the shoulders and down over its rump. Several badgers have been caught and fitted with small radio transmitters, the signals from which can be picked up on receivers thus enabling the movement of the animals at night to be monitored. Much interesting data is being compiled regarding movements and ranges.

32. OTTER. A field meeting of the Mammal Section in November, led by Miss Elizabeth Lenton produced very good evidence of otters in several sites visited in North Somerset. In one particular area, very fresh spraints and clearly defined footprints, probably no more than a few hours old were seen, together with fresh mink scats and footprints. This provided an excellent opportunity for members present to compare the two. A portion of eel, about one inch in diameter by about six inches long was found nearby. It had been eaten from both ends, though by which of the two animals it was uncertain.

34. GREY SEAL. Seen by a yachtsman in the Severn Estuary near Counts Buoy off Oldbury Power Station on July 1st (L.P.).

45. ROE DEER. The only deer species reported in 1979 was Roe. Two does were seen grazing on stubble on Lansdown (E.J.L.). They ran off into nearby woodland when disturbed (E.J.L.). The other records were of slots, some at Dolebury Warren (M.A.K.) and others at Silkwood (A.F.J.). The latter were subsequently confirmed by a local Forestry Commission officer who knew of three roe in the vicinity.

53. BROWN HARE. Nowhere reported as common but fairly well spread with reports from twelve ten-kilometre squares. Sighted reguarly at West End, Nailsea (H.R.H.) where the observer reports "appreciably more sightings than usual, but uncertain whether this means more hares or the same few seen more frequently". A farm worker found two very small leverets in the same farm near Nailsea Court. Regular sightings were made in the Yeo Estuary area (H.E.R.). A car driver stopped in Lower Almondsbury to allow a hare, apparently bemused by the headlights, to gain the roadside (D.V.S.). The

two road casualties happened within a kilometre of each other, near Winterbourne, one in April, the other in December (A.F.J.). Although walking the surrounding fields regularly for the last twenty years, I have yet to see a hare in them.

55. RABBIT. Widely seen throughout the area, reports covering 23 ten-kilometre squares. The recordings were of both obvious field signs and of live animals. An instance of myxomatosis was noted near Thornbury (L.K.). A police motor patrol driver several times saw a large number on the grassy roundabout on the A46 road at the M4 intersection at Tormarton (D.T.). He believed them to stay there all night. A pure black rabbit was seen at Pipley Bottom (E.J.L.). Several were seen feeding in a cemetery at Coldharbour Lane, Filton (A.F.J.).

57. GREY SQUIRREL. Generally seen over a wide range with peak observations from August to October. Almost half the sightings were from suburban settings, particularly in the Clifton district where it is not uncommon to see them raiding waste bins around the Downs (P.J.C., A.F.J.). One was seen at Henbury being hotly pursued by a cat (D. & J.G.). Another was watched stripping hazelnuts from the upper branches of a tall tree and dropping the broken shells down onto the ground.

59. DORMOUSE. A visit on August 4th to examine the dormouse nest boxes situated in a Somerset Nature Reserve revealed several with nests in them. An adult ran from one box up into the tree canopy. The nest was gently investigated and young could be felt inside (A.F.J.). Distinctively chewed nuts were found in two other locations, both of which were previously known sites (E.J.L.).

61. HARVEST MOUSE. Poorly recorded - the signs being that 1979 was not a good year for this species. Only three occurrences were noted (A.F.J., E.J.L.) two of them being but single nests. The grass verge site on the A46 road, which has been monitored for several years, showed a welcome increase in numbers of nests. Thirty-five, mostly breeding nests, were discovered on October 21st. A dead adult harvest mouse was found in one nest. This site contained well over one hundred nests when first discovered but has dramatically declined until only two were found last year (A.F.J.).

62. WOOD MOUSE. Remains in bottles were identified from seven locations (A.F.J.). Several were caught in Flap traps at Winterbourne Down and in Flap and Longworth traps at Littleton Nature Reserve in reed beds (R.A.B./A.F.J.). A body was recovered from an urban garden pond (R.J.P.). One was seen scampering through fallen branches during a Sectional Field meeting in Silkwood.

64. HOUSE MOUSE. An adult was found frozen into the surface ice on a garden pond in Henleaze (R.J.P.). Two skeletons were found in a deep tin in a garden shed at Winterbourne Down. They were identified by the tooth root cavities in the skulls. A house mouse was caught by a Henbury cat (D.G.).

66. COMMON RAT. During the Sectional bottle survey meeting in February, a layby on the A38 at Rudgeway was searched for bottles. There was much refuse dumped at this site as there was a prolonged dustman's strike in Bristol at the time. One of the members spotted movement in a large black polythene bag. After a few minutes three young rats, less than half grown, emerged from a hole in the bag and disappeared down over the bank. There was a distinct run from the bag to a hole some way down the bank. Several of those present had previously seen an adult rat emerge from this hole. The next layby, at Alveston, also contained much refuse and here there were numerous rat droppings and runways through the rubbish. The majority of the other records received were of road casualties.

67. BANK VOLE. Ten recordings were made from seven different 10 kilometre squares, including bottle remains, gnawed hazel nut shells and two lots of live-trapping.

68. WATER VOLE. Recorded at Chew Valley Lake and Tortworth Lake (H.E.R.) and from the River Boyd at Wick, the River Frome at Winterbourne Down and Bradley Brook at Winterbourne (A.F.J.).

69. FIELD VOLE. A total of fourteen records from eight different 10-kilometre squares is grossly under-recorded fro this very common small rodent. Seven instances of remains in discarded bottles were noted as were four instances of nests, and runs under pieces of flat sheet of various materials.

AVON & DISTRICT ENTOMOLOGICAL REPORT 1979

Compiled by the recorders of the Entomological Section

G.R. Best
R.S. Cropper
B.S. Harper
K.W. Miller
A.R. Nichols
K.H. Poole
R.H. Poulding
R.W. Rowe

In 1977 the title of these entomological notes was changed from Lepidoptera Notes to Entomological Notes, Bristol District to accommodate records from other orders in addition to the moths and butterflies. A further change of name after only two years to Avon & District Entomological Report may seem superfluous and requiring an explanation of why this was necessary after so short an interval. The increase in records from a wide range of insect groups was due in part to the Avon Entomological Survey - a project initiated by the Section to collect data for the Biological Records Centre and for the Section's local mapping schemes. It was uncertain at the time whether this volume of records could be maintained to justify an annual report based on Avon and therefore only a minor change in title was made to enable other orders to be included. Fortunately, the volume of records from members has been maintained to enable an annual report to be produced for Avon, and to include records from adjacent localities in Somerset and Gloucestershire which are not adequately covered by a local or county publication. The inclusion of Avon in the title of this report is also in keeping with the bird and mammal reports in the _Proceedings_, and reflects the change by the Entomological Section to a similar more defined recording area which will be of value in detecting changes in insect numbers and distribution from year to year.

An exceptionally cold spring, following a severe winter, will long be remembered by entomologists for the scarcity and late emergence of many species in 1979. January and February were the coldest since the winter of 1963, and the severe frosts combined with persistent high winds destroyed or damaged many of the less hardy shrubs. _Buddleia_ and _Hebes_ sp. often grown in gardens to attract insects were severely affected but fortunately the naturalised _Buddleia davidii_ so prolific in the Avon Gorge and banks of the R. Avon in Bristol escaped with little damage. Abundant blooms in summer on these shrubs were a marked contrast to many decimated _Buddleia_ sp. in gardens. Below average temperatures were recorded for each month from January to June with only an occasional mild spell. The first of May was one of the coldest May Days in many parts of the country since records were first kept and the below average temperatures persisted until late June. Light south-westerlies in July brought a change to mainly warm and sunny weather but August was generally unsettled with severe gales in mid-month. From September until early December the autumn was exceptionally mild with long sunny spells and few night frosts.

Records refer to Avon unless S. or G. appears after the locality denoting Somerset and Gloucestershire respectively, and are of single specimens unless noted otherwise. The following sent in records from which this report has been compiled:-

R.A. Angles, H.K. Barton, K.T. Batty, G.R. Best, C.S.H. Blathwayt, I. Burston, J.F. Burton, P.J. Chadwick, R.S. Cropper, E.W. Gane, Mrs N.J. Gibbs, B.J. Gregory, Miss I.F. Gravestock, J. Hadley, B.S. Harper, Miss M. Harris, G.G. Hartnell, Mrs M. Knight, K.W. Miller, B. Moore, A.R. Nichols, R.M. Payne, K.H. Poole, R.H. Poulding, R.W. Rowe, G.W. Sorrell, A.H. Weeks.

BUTTERFLIES (Lepidoptera) by B.S. Harper.

1979 was a better year for butterflies than the two preceding ones although the cold, late spring resulted in the flight period of many species being much later than average. Recently emerged Small Blues were seen on the wing in the last week of June about a month later than usual. However, Small Tortoishells were seen flying over snow-covered ground in late February. Two separate sightings of the Clouded Yellow were made in North Avon during August and September whilst a new locality for the Brown Hairstreak was discovered in the same district. A total of 19 observers sent in records of butterflies in 1979 but information on all species from more members would enable a more precise picture of the distribution and flight periods to be made especially of the commoner ones. The scientific names and orders of species follow those given in the checklist of species in 'A Field Guide to the Butterflies of Britain and Europe' by L.G. Higgins and N.D. Riley, 3rd ed. (1975), and published by Collins.

Colias crocea Geoffroy (Clouded Yellow). Singles at Marshfield, August 12 and Filton, September 13.

Limenitis camilla L. (White Admiral). Three, Michael Wood, Nr. Stone, July 12 and 12 on 17th; 15, Wetmoor Reserve, Nr. Wickwar, July 26 and one, Blagdon, August 5.

Vanessa atlanta L. (Red Admiral). Recorded from many localities in the county and the numbers reported indicate a successful season for this species.

Vanessa cardui L. (Painted Lady). This immigrant first reported at Uphill, June 28; Street Heath, Nr. Street, S., July 21; Bannerdown, Nr. Bath, August 27; Burnham-on-Sea, S., August 28; three, Avon Gorge, Bristol, August 29; Weston-super-Mare, August 30; Bleadon Hill, Nr. Bleadon, S., September 15 and two larvae found on nettle, Sand Point, S., September 24.

Polygonia c-album L. (Comma). Reported in small numbers throughout the county.

Argynnis paphia L. (Silver-Washed Fritillary). Brockley Combe, Nr. Brockley, July 14; two, Michael Wood, Nr. Stone, G., July 17; six, Wetmoor Reserve, Nr. Wickwar, July 17 and 16 on 25th; three, Congresbury, July 21 and two, Goblin Combe, Nr. Cleeve, July 29.

Mesoacidalia aglaja L. (Dark-green Fritillary). Two, Compton Bishop, S., July 7 and three, same place, August 12; two, Brockley, July 14; three, Burrington Combe, Nr. Burrington, August 5 and three, Charterhouse, Mendip, S., August 11.

Clossiana selene Schiff. (Small Pearl-bordered Fritillary). Three, Dolebury Warren, Nr. Churchill, June 24; seven, Compton Bishop, S., July 1; six, Brockley, July 14, 15.

Clossiana euphrosyne L. (Pearl-bordered Fritillary). Three, Brockley, June 1 and two same place on 17th.

Euphydryas aurinia L. (Marsh Fritillary). The only record is of two at Charterhouse Mendip, S., on June 2.

Melanargia galathea L. (Marbled White). Generally another poor season for this species but several new localities reported - Mangotsfield; river bank at Sea Mills, Bristol; Charmy Down, Nr. Bath; Frost Hill, Congresbury; also at Pensford and Chew Stoke.

Hipparchia semele L. (Grayling). Goblin Combe, Nr. Cleeve, July 15; five Sand Point, July 22 (first report since colonies destroyed by fire in 1976); 12,Compton Bishop, S., August 12 and one, Uphill, same date; Cheddar Gorge, August 29.

Aphantopus hyperantus L. (Ringlet). Generally reported but only noted as common at Wetmoor Reserve, Nr. Wickwar and Brockley.

Lasiomata megera L. (Wall Brown). Sand Point, May 20 and nine, same place, June 17 with ten, August 11; ten, Uphill, June 9 and one, September 29; Frost Hill, Congresbury, June 17; three, Dyrham, August 26 and one, Tog Hill, Nr. Cold Ashton, same date; two, Tyntesfield, Nr. Wraxall, August 27; 12, coast, Woodspring Bay, August 27 and three, Bannerdown, Nr. Bath, same date; two, Chittening Warth, Nr. Avonmouth, August 28 and one, Weston-super-Mare, August 29.

Hamearis lucina L. (Duke of Burgundy Fritillary). Six, Midger Wood Reserve, Lower Kilcott, June 18.

Thecla betulae L. (Brown Hairstreak). Larvae beaten from Blackthorn *Prunus spinosa*, Inglestone Common, Nr. Hawkesbury.

Quercosia quercus L. (Purple Hairstreak). Single at Filton, July 20; two, Michael Wood, Nr. Stone, G., July 25 and one, Wetmoor Reserve, Nr. Wickwar, same date; six, Haw Wood, Nr. Hallen, August 2 and one, Compton Bishop, S., August 12.

Strymonidia w-album Knoch. (White Letter Hairstreak). Ten, Long Ashton, July 20; Michael Wood, Nr. Stone, G., July 25 and Haw Wood, Nr. Hallen, July 27.

Callophrys rubi L. (Green Hairstreak). Shute Shelve Hill, Nr. Axbridge, S, May 6; Compton Bishop, S., June 10; three, Midger Wood Reserve, Lower Kilcott, June 18; three, Dolebury Warren, Nr. Churchill, June 24 and a single, Westbury-on-Trym, Bristol, June 27

Cupido minimus Fuessly. (Small Blue). First reported at Charterhouse, Mendip, S, in early June; common, Walton Down, Clevedon, June 18; 30, Uphill, June 9 and 35, same place on 16th with four on August 4; several, Radstock, mid-June; eight, Dolebury Warren, Nr. Churchill, June 24 and 18, Midger Wood Reserve, Lower Kilcott, September 1.

Celastrina argiolus L. (Holly Blue). Reported in small numbers throughout the county.

Aricia agestis Schiff. (Brown Argus). Seven, Sand Point, June 13 and five, same place, August 11; two, Brockley, June 17; Dolebury Warren, Nr. Churchill, June 24; Goblin Combe, Nr. Cleeve, July 15; disused railway, Congresbury, August 22; two, Burrington Combe, Nr. Burrington, August 27 and ten, Bannerdown, Nr. Bath, same date.

Lysandra coridon Poda.(Chalkhill Blue). Ten, North Nibley,G, July 25; ten, Uphill, August 4 and 11 on 29th; several,Banner Down, Nr. Bath, August 24 but over 50 on 27th; three, Brean Down,S, Aug.26 and last recorded on 29th at Uphill.

Pyrgus malvae L. (Grizzled Skipper). Cheddar Wood, Nr. Axbridge,S, May 6: Compton Bishop,S,May 6 and three, same place, June 10; up to three, Brockley, various dates, June; Midger Wood Reserve, Lower Kilcott, June 18; Filton, June 22 and three, Dolebury Warren, Nr. Churchill, June 24.

Erynnis tages L.(Dingy Skipper). Charterhouse, Mendip,S, June 6 and Uphill, same date; two, Compton Bishop,S, June 10; two, Brockley, June 17 and one, Sand Point, June 17 and July 1; three, Midger Wood Reserve, Lower Kilcott, June 18 and two, Dolebury Warren, Nr. Churchill, June 24.

MOTHS (*Lepidopters*) by K.H.Poole.

Once again numbers of moths, both of species and individuals, were below average in 1979, and apart from the Silver Y, the only migrant reported was the Humming-bird Hawk-moth. Several rarely reported or vagrant species were recorded, among them - *Apamea furva*, *Hopiodrina ambigua*, *Lithophane leautieri*, *Plusia chrysodeixis*, *Scopula emutaria*, and *Conopia myopaeformis*. Names are in accordance with Kloet and Hincks. *A Check List of British Insects, 1977*.

Sphinx ligustri L.(Privet Hawk). Several records, including about 150 larvae, Bristol Sept. and Oct.(BSH); larva on Guelder Rose *Viburnum opulus*, Charterhouse, Mendip,S, Sept.(BSH).

Macroglossum stellatarum (Humming-bird Hawk). Weston-s-Mare, September 4 (JH).

Pseudoips fagana L. (Scarce Silver Lines). Several, Weston-s-Mare, August (CSHB).

Arctia villica L. (Cream-spot Tiger). Two, Brean Down, S, June 24 (RSC).

Callimorpha dominula L(Scarlet Tiger). North Nibley,G,July 25 (ARN).

Atolmis rubricollis L (Red-necked Footman). Weston-s-Mare, July 15 (CSHB).

Acronycta leporina L. (Miller Dagger). Larva, Walton Moor, Nr. Walton-in-Gordano, August 19 (ARN).

Craniophora ligustri Schiff. (Coronet). Knowle, Bristol, August 29 (HKB).

Amphipyra pyramidea L.(Copper Underwing). Leigh Woods, Nr. Bristol, August 27 (GHS).

Apamea characterea Hb.(Clouded Brindle). Coombe Dingle, Bristol, July 2 (HKB).

A.furva Schiff. (The Confused). Weston-s-Mare, July 15 (CSHB).

Hopiodrina ambigua Schiff. (Vine's Rustic). Berrow,S,August 28 (CSHB).

Cosmia pyralina Schiff (Lunar-spotted Pinion). Weston-s-Mare, July 18 (KHP).

Archanara dissoluta Treit.(Brown-veined Wainscot) Berrow,S,August 28 (CSHB).

A.geminipuncta. Haw. (Twin-spotted Wainscot) Berrow,S, (CSHB).

Mythimna obsoleta Hb. (Obscure Wainscot). Several, Berrow,S,July (CSHB).

Lithophane semibrunnea Haw. (Tawny Pinion). Brockley, April 21 (HKB).

L.leautieri Boisd. (Blais Pinion). Weston-s-Mare, October 9 (CSHB). The second record of this species for Weston.

Jaspidia fasciana L (Marbled White Spot). Shapwick,S, June 18 (HKB).

Panemeria tenebrata Scop. (Small Yellow Underwing). Numerous Filton Golf Course, Bristol, June 17 (JFB).

Polychrista moneta Fab. (Golden Plusia). Knowle, Bristol, July 3 (HKB).

P. chrysodeixis (chalcites Esp.) (Gilt Y). Female, Brislington, Bristol, October 10 - eggs laid and moths reared (HKB). First record for the area.

Scopula emutaria Hb. (Rosy Wave). Weston-s-Mare, July 15 (CSHB). First record for Weston-s-Mare, and not recorded in Somerset.

Eupithecia denotata Hb. (Campanula Pug). Larvae, Sandford, August 19 (HKB).

E.tripunctaria H.S.(White-spotted Pug). Knowle, Bristol, June 20 (HKB).

Abraxas sylvata Scop. (Clouded Magpie) Filton, Bristol, June 20 (RA). The only record received for this elm-feeding species.

Plagodis pulveraria L. (Barred Umber). Goblin Combe, June 25 (HKB).

Selenia tetraluparia Hufn. (Purple Thorn). Congresbury, October 12 (GWS).

Deuteronomes fuscantaria Haw. (Dusky Thorn). Knowle, Bristol, September (HKB).

Cepphis advenaria Hb (Little Thorn). Leigh Woods, June 6 (GWS).

Zeuzera pyrina L. (Leopard Moth). Congresbury July 12 (RWR).

Conopia myopaeformis Borkh. (Red Belted Clearwing). Weston-s-Mare, July 7,10 (KHP). Appears to be the first record for Weston and not recorded in Somerset for many years. Further additions to the Congresbury list (RWR and GWS) are Habrosyne pyritoides L (Buff Arches), Philudoria potatoria L. (Drinker Moth), Malacosoma neustria L. (Lackey), Drepana falcataria L. (Pebble Hook-tip)- Nola cuculatella L (Short-cloaked), Phragmatobia fuliginosa L. (Ruby Tiger), Eilema griseola HB (Dingy Footaman) Acronycta megacephala Schiff(Poplar Grey), Diarsia rubi Vieweg. (Small Square-spot), Noctua ianthina Schiff (Lesser Broad Bordered Yellow Underwing), Mythimna ferrago Esp. (Clay), Jodis lactearia L. (Little Emerald), Scopula immutata L. (Lesser Cream Wave), Idaea biselata Hufn (Small Fan-footed Wave), Eulithis mellinata Fab. (Spinach), Electrophaės corylata Thunb. (Broken-barred Carpet), Anticlea badiata Schiff. (Shoulder Stripe), Eupithecia absinthiata Cl. (Wormwood Pug), Chloroclystis rectangulata L. (Green Pug), Colotois pennaria L. (Feathered Thorn), Crocallis elinguaria L. (Scalloped Oak), Semiothis clathrata L. (Latticed Heath) Aphomia sociella L., Abrostola trigemina Werne. (Spectacle).

This list brings the total number of species recorded at Congresbury since 1975 to 151.

BEETLES (Coleoptera) by R.W. Rowe.

The numbers of observers contributing to the coleoptera records remain disappointingly small and hence the following selection of the more interesting records is not necessarily an indication of the scarcity of these species. Staphylinus olens (Devis's Coach Horse) and Clytus arietus (Wasp Beetle) - two species selected for special attention - were noted in several localities. The Entomological Survey of Leigh Woods (Forestry Commission block) has been in progress since 1976 and 41 species of beetle have been identified. These have been all typical of such a woodland habitat and have, so far, produced no surprises. Again I am indebted to R.S. Cropper for another comprehensive report covering many places in South Avon and adjacent areas of Somerset and to Dr. K.W. Miller for contributing the section on the Coccinellidae.

The nomenclature followed is that of Kloet and Hincks, A Check List of British Insects, Second Edition, Part 3, 1977.

Sermyla halensis L. On grass, Brean Down, S, June 15 (RWR) and Uphill, September 22 also on grass (RSC).

Sinodendron cylindricum L. In rotten ash stump, Weston Woods, Weston-s-Mare, January 1 (GHS).

Staphylinus olens Mull. 35, Weston Woods, Weston-s-Mare, July 27 (GHS).

Dorcus parallelopipedus L. Weston Woods, Weston-s-Mare, July 27 (GHS).

Endomychus coccineus L. In garden, Congresbury, August 27 (RWR).

Dytiscus marginalis L Female, Clarken Coombe round pond, Ashton Court, Bristol, March 21 (RSC), and one in garden, Congresbury, April 16 (GHS).

Lampyris noctiluca L. Three in grass, old railway line, Congresbury, July 10 (RWR).

Attagenus pellio L. Found in house, Congresbury, April 8 and May 15 (RWR).

Meloe violacae Marsh. In grass near Bristol Airport, Lulsgate Bottom, May 5 (GHS).

Enochrus quadripunctatus var. halophilus Bedel. Few in brackish rhine, Kingston Seymour, October 28 (RSC).

Cicindela campestris L. Numerous in wood near Priddy, S, April 15 (ARN).

Phosphuga atrata L. Found beneath stone, Nr. Walton-in-Gordano, June 14 (RSC).

Coccinellidae (Ladybirds)

Records were received from five members and included an account of ladybirds swarming at Uphill, Near Weston-s-Mare supplied by RHP which is of particular interest. Among the species noted were a number of Tytthaspis 16-punctata L(identification confirmed by KWM). This is rather a local species usually confined to marshy areas and not previously noted from Avon since we started to record for the Ladybird Distribution Maps Scheme.

Swarming of ladybirds at Uphill

On August 12 at about noon a large concentration of ladybirds were observed along the river side of the sea wall. It was estimated that there were some 2,000 Coccinella 11-punctata (11-spot ladybird) on the river side of the sea wall and on the dry mud nearby, and especially around two large Spear Thistles which were covered with groups of ladybirds, many motionless, but others moving rapidly, especially over the hard mud.

At least another 1,000 were on the rough stone field wall and on the nearby blackthorn and bramble hedge. In addition, some 50 larvae were found running about on the stone wall. Along with the C.11-punctata, approximately 50 C.7-punctata (7-spot Ladybird), one Adalia 2-punctata (2-spot Ladybird) and ten Tytthaspis 16-punctata were noted. The weather was recorded as warm and close, being cloudy with sunny intervals and a light south-westerly breeze.

On a return visit to the same site three days later, after two days of windy weather with heavy rain, ladybirds were still in evidence, although in much smaller numbers and mostly appeared to be dormant. On this occasion, approximately two hundred 11-spot, ten 7-spot and sixteen Tytthaspia 16-punctata were counted.

DAMSELFLIES AND DRAGONFLIES (Odonata) by A.R. Nichols.

Many fewer records of Odonata were received than in 1978 but it is not certain whether this was due to a scarcity of dragonflies or a reduction in the number of forays in the field by observers. However, I noted that in one particular locality the population of the commoner species was reduced as compared to last year. The scientific and vernacular names are in accordance with the check list given in The Dragonflies of Great Britain and Ireland by Cyril O Hammond (1977) and published by Curwen Books.

Coenagrion puella L. (Azure Damselfly). Abundant in many places-first noted emerging in numbers, pool near railway, Worle, May 19 (RSC); Canford Park, Westbury-on-Trym, Bristol, May 19 (RHP); Leigh Woods (Forestry Commission), July 1 and abundant, Dodington, August 4 (RHP); two, Walton Moor, near Walton-in-Gordano, August 19 (ARN).

Enallagma cyathigerum Charpentier (Common Blue Damselfly). Eastwood Park, Nr. Falfield, June 6 (ARN); abundant, Smitham Hill, Nr. East Harptree, June 17 (RSC); two, Eastwood Park, Nr. Falfield, June 27 (ARN); several, Hallen, July 11 (RHP); common, Chew Valley Lake, July 15 (RSC) and abundant, Blagdon Lake, July 22, August 5(RSC).

Pyrrosoma nymphula Sulzer (Large Red Damselfly). Two males, and a female, Eastwood Park, Nr. Falfield, June 1 and mating pair, same place, June 27 (ARN); several, Smitham Hill, Nr. East Harptree, July 15 (RSC).

Ischnura elegans van der Linden (Blue-tailed Damselfly). Abundant many places - first noted emerging, Worle, May 19 (RSC); two males, Eastwood Park, Nr. Falfield, June 27 (ARN) and several, Chew Valley Lake, July 15 (RSC).

Aeshna cyanea Muller (Southern Hawker). Street Heath, between Mere and Street,S, July 21 (RSC); Leigh Woods, (Forestry Commission), Bristol, August 11 (RHP); Brent Knoll August 26 (RSC); Henleaze, Bristol, September 22 (RHP) and several, Mudgley, Nr. Wedmore,S, September 25 (RSC).

Aeshna grandis L. (Brown Hawker). Stoke Bishop, Bristol, July 31 (IFG) and two males Dodington, August 8 (RHF).

Aeshna juncea L. (Common Hawker), Stoke Bishop, Bristol, September 13 (IFG).

Aeshna mixta Latreille (Migrant Hawker). Over dunes, Berrow,S, October 21 (RSC).

Anax imperator Leach (Emperor Dragonfly). Eastwood Park, Nr. Falfield, July 10; dunes, Berrow,S, August 4 and Worle, August 12 (RSC)

Brachytron pratense Müller (Hairy Dragonfly), Several, Ashcott Heath, Ashcott, June 20 (

Orthetrum coerulescens Fab. Keeled Skimmer. Teneral male, Asham Wood, S, July 5 (ARN).

Orthetrum cancellatum L Black-tailed Skimmer. Pair, dunes, Berrow, S, August 4 (RSC).

Libellula depressa L. (Broad-bodied Chaser). Several, Shapwick Heath, Nr. Shapwick,S, June 20 (RSC); teneral male, Michael Wood, Nr. Stone, July 12 (ARN) and several, nature reserve, Street Heath, S, July 15 (RSC).

Libellula quadrimaculata L. (Four-spotted Chaser). Several, Smitham Hill, Nr. East Harptree, June 17 and at Ashcott Heath, Ashcott, S, (RSC).

Sympetrum sanquineum Müller(Ruddy Darter). Recorded by RSC at Blagdon Lake, August 5; and several, same place, on 11th; few, Worle, August 12 and a single, Ashcott Heath, Ashcott,S, September 16.

Sympetrum scoticum Donovan (Black Darter). Male, Priddy pools, Mendip,S, October 13 (RS - a late date for this species.

Sympetrum striolatum Charpentier (Common Darter) Reported as abundant in many known localities by RSC who noted this species at the following new sites:- Kingston Seymour, Worle, Brean Down, S, and Street Heath between Street and Mere, S. Records ranged from July 21 to October 28. Other sightings included five at Uphill, August 12 (RHP); one male and two females, Walton Moor, Nr. Walton-in-Gordano August 19 (ARN) and a female, Leigh Woods (Forestry Commission), September 2 (RHP).

CRICKETS & GRASSHOPPERS (Orthopters) by K.W. Miller.

There were no surprises but as always all records are of value in monitoring the status of this group. The following are some of the more interesting records received.

Tettigoniidae (Bush Crickets)

Tettigonia viridissima L. (Great Green Bush Cricket). Singing males in several places between Clevedon and Portishead, September 5. One singing at Uphill and another at Wrington Warren both on September 22 (RSC). Several at Walton Moor, Walton-in-Gordano, August 12 and again recorded during Ent.Sect.field meeting on the 19th (KWM).

Meconema thalassinum Dg. (Oak Bush Cricket). Nymph, Blagdon Lake, August 11; Litton Reservoir, September 30 (RSC) and Walton Moor, Walton-in-Gordano, August 12 (KWM).

Pholidoptera griseoaptera Dg. (Dark Bush Cricket). On both banks of Avon Gorge, November 6 (RSC). Common in hedgerows around Claverham and Brockley during September and October, and early November (KWM).

Leptophyes punctatissima Box (Speckled Bush Cricket). One, Leigh Woods, (Forestry Commission), Bristol, October 21 (RHP).

Platycleis derticulata Pz.(Grey Bush Cricket) Again found in good numbers on Brean Down, S, August 20 (RSC).

Conocephalus dorsalis Lat.(Short-winged cone-head). Male, Easton-in-Gordano, August 19. Several beside rhines, Kenn Moor, in August (KWM).

Acrididae (Grasshoppers)

Chorthippus albomonginatus Dg.(Lesser Marsh Grasshopper). Plentiful on banks of R. Yeo, Congresbury, September 28 (RSC), Common, Kenn Moor, August and September (KWM).

Tetrigidae (Ground Hoppers)

Tetrix undulata Sow.(Common Ground-Hopper), Worle, August 12 (RSC).

T. subulata L.(Slender Ground-Hopper). Both shores of Blagdon Lake in April. Around Chew Valley Lake July and September (RSC).

TRUE FLIES (Diptera) by R.H. Poulding.

The year was noteworthy for the scarcity of flies in Spring on *Salex* and other early blossom due to the persistent low temperatures and, in contrast, for the mild autumn which extended the flight period of many tachinids, muscids, syrphids and other families until late November or in some species to early December. Unusual concentrations of hover flies were recorded in several localities in Avon from mid August to late September involving *Syrphini* sp. whose larvae feed on aphids, and *Eristalini* sp. which in the larvae stage inhabit mud and stagnant water. Perhaps the most remarkable concentration was on the blossom of Sea Aster (*Aster tripolium*)growing in profusion along rhe banks of the river in the Avon Gorge where the hover fly population reached a peak in late August of 10-20/square metre of flowering plants. The species selected for special study by the Section - the Gad Fly (*Haemotopota pluvialis*) and the syrphid *Volucella pellucens* - were noted in several new 10 km. squar but records were few particularly for the Gad Fly which appears locally scarce in many favourable habitats. The scientific names used are those given in Kloet and Hincks. *A Check List of British Insects*, Second Edition, Pt.5, 1975.

Chrysops caecutiens L. (*Tabanidae* - Horse Flies). Two, Walton Moor, Nr. Walton-in-Gordano, August 19 - found on Ent. Sect. field meeting.

Hybomitra bimaculata Macquart (*Tabanidae*). Female found in window of house, Congresbury, June 11 (GWS) and another Stoke Woods, Rodney Stoke, S, in June (RMP).

Tabanus bromius L. (Tabanidae). Male on tree stump, Congresbury, June 17 (GWS).

Bombylius major L. (*Bombyliidae* - Bee Flies) Two, Midger Wood, Lower Kilcott, April 17 and one, same date, Henleaze, Bristol (RHP); several on primroses, Nr. Axbridge, May 6 (RSC).

Bombylius discolor Mikan (*Bombyliidae*). Midger Wood, Lower Kilcott, April 17 (RHP) and several on primroses, edge of path, Cheddar Wood, Nr. Axbridge May 6 (RSC).

ıryxe nemea Meigen (Tachinidae). Hatched from moth pupa, Congresbury, Mar.3 (GWS), ıd Southmead, Bristol, April 1 (RHP). This is a common tachinid which parasitises ıterpillars of a wide range of both butterflies and moths.

.atycephala planifrons Fab. (Chloropinae). Hatched from pupa found in stem of ɜed (Phragmites), Congresbury, May 12 (GWS). A number of reeds contained the ypical swelling in the stem indicating feeding larvae or pupae of this chloropid.

lucella bombylans L. (Syrphidae - Hover Flies). Recorded from Inglestone Common, :. Hawkesbury (ARN), Dodington and Shirehampton (RHP).

iorhina berberina Fab. (Syrphidae). Female, Leigh Woods (Forestry Commission), istol, July 14 and another Nr. Cadbury Camp, Tickenham, July 8 (RHP). This is ıcommon syrphid closely resembling several species of Humble Bees.

opidia scita Harris (Syrphidae). Female, swept from low vegetations, Congresbury, ıne 27 (RWR) - an uncommon hover fly in Avon which prefers marshy habitats where the ırvae develop in mud. Has occurred in large numbers at suitable sites in some ›uthern counties.

istalis tenax L (Drone Fly - Syrphidae). Large concentration on Michaelmas Daisy ıster novi-belgii), in marsh, Shirehampton, Bristol, Sept.27, - numbers on the :tensive tracts of blossom in excess of 10,000. Other Eristalini present included 200 Eoseristalis arbustorum and smaller numbers of E.pertinax and Helophilus pendulus ɪHP).

UE BUGS (Hemiptera-Heteroptera) by R.S. Cropper.

One hundred species were recorded from Avon and district in 1979 and special nphasis was placed on studying the aquatic species. Several of these were confirmed as :ill occurring in sites from which they were first recorded by G.A. Walton in The Water ıgs of N. Somerset, Trans. Soc. Brit. Ent., 8, 231-90 (1943). Some of the more interesting ɜcords of both terrestrial and aquatic species are listed below.

Sciocoris cursitans Fab. Plentiful on grassland, Loxton Hill, Nr. Loxton,S, June 9.

Eysarcoris fabricii Kirkaldy. found on Limestone Woundwort (*Stachys alpina*), Wotton-under-Edge,G, June 26. *S.alpina* is a rare plant in Britain recorded only from Gloucestershire and Denbigh. It is closely related to the common Hedge Woundwort (*S.sylvatica*) which is reported to be the host plant of this bug but it will obvious accept the rarer species.

Dolycoris baccarum L. On mixed vegetations, Sandford Hill, Sandford, May 12.

Rhacognathus punctatus L. On heather, Priddy, S, August 4.

Zicrona caerulea L. In rank grass, Brent Knoll, S, August 26.

Chrosoma schillingi Schumm. Abundant in marram grass, dunes, Berrow, S, July 29.

Berytinus minor (Herrich-Schäffer). Two on Restharrow (*Ononis repens*), Brent Knoll S, August 26.

Gampsocoris punctipes Germ. In short turf, dunes, Berrow, S, July 29.

Dicyphus stachydis Reut. Plentiful on *Stachys alpina*, Wotton-under-Edge, G, June 26. See remarks under *E. fabricii*.

Pantilius tunicatus Fab. Several on Hazel, Nr. Barrow Gurney Res., October 7.

Mesovelia furcata Mulsant & Rey. Abundant on floating mats of green algae and leav of Frog-bit (*Hydrocharis morsus-ranae*) in pool near railway line at Worle, August 12 This is a site from which it was first recorded by Walton and this local species whi may prove more widespread if given closer study.

Gerris argentatus Schumm. Several on pool near railway, Worle, May 19. This is another old record by Walton and the only site at which he found this species in Nor Somerset.

Corixa affinis Leach. Few in brackish rhine below Brean Down, S, February 25 and t also in brackish rhine, Kingston Seymour, October 28.

C.panzeri Fieb. Three, Charterhouse, Mendip,S, March 4 and three, Cheddar Res.,S, Ma ctocorisa germari Fieb. Plentiful, Blagdon Lake, August 5. Walton recorded it as minant at this site which is still true to-day particularly along the north shore.

gara concinna Fieb. Five specimens from brackish rhine below Brean Down,S, February and male, Blagdon Lake, April 15.

semistriata Fieb. In peaty rhine, Nr. Clapton-in-Gordano, February 4.

stagnalis Leach. Abundant in brackish rhine, Kingston Seymour, October 28.

WFLIES, BEES, WASPS, ANTS etc. (Hymenoptera) by G.R. Best.

rmicidae (Ants)

rmica rufa L. (Wood Ant). No additional localities recorded for this rapidly clining species. Formerly found in widely separated localities in the district rticularly along the edges of the Mendip. To complete the proposed distribution of this species all records including negative ones are required.

ipidae (Gall Wasps)

lricus quercus-calcis L. 'Knopper' galls on oak caused by this species reported m Ladye Bay area, Clevedon by KTB. Although widespread on the European mainland, first appeared in Norfolk in 1969 and has since spread across southern England. large, many loped, crinkly gall growths deform the cups causing the acorns to drop ore they are ripe.

pinae (Social Wasps)

pa crabro L. (Hornet). No records were received for this species which was ected for special study to determine its present distribution in Avon. Negative orts from large forest areas such as Leigh Woods, Bristol suggest that the Hornet is very scarce or even absent from Avon. Enquiries from local foresters confirm its ence from major woodlands and it has not been seen in Leigh Woods for a number of rs. Both old and new records would be of value for this distribution study.

ER ORDERS - EPHEMEROPTA (Mayflies)

nis robusta Eaton. Several nymphs in drain, Shapwick Heath, between Shapwick and re,S, June 20 and Tadham Moor, Nr. Westhay,S, on 21st (RSC). This species was first orded in Britain from Norfolk in 1954, and has been recorded from other counties since the publication of the description of the nymph. These are the first records for Somerset.

ARACHNOIDEA - SPIDERS AND SCORPIONS

Although it concerns an arachnid and not an insect the following account of a scorpion found in Clifton, Bristol will be of interest to naturalists.

Scorpio italicus (Italian Scorpion). An immature found alive in Broadcasting House, Clifton, May 13, was identified by B. Betts as this species. It was considered to have been accidently introduced into the building from packages received from Italy (J

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